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OUR
MODERN BANKING
AND
MONETARY SYSTEM

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OUR MODERN BANKING AND MONETARY SYSTEM

By

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TO
THE MEMORY OF
MY
FATHER AND MOTHER

PREFACE

THIS book falls naturally into two major divisions. The first is descriptive of the nature and operation of our money and banking system. The second deals with the somewhat broader aspects of modern monetary problems.

The first twenty-nine chapters, which describe our money and banking system, are designed to accomplish three things:

First, to provide an understanding of the monetary mechanism. For this purpose a description of the various forms of money, bank credit substitutes, and monetary standards which have been in use from time to time is included.

Second, to supply the basic, elementary information needed for an intelligent approach to the banker-customer relationship. Several chapters have been devoted to such topics as the meaning of the bank statement, the nature of credit instruments, the nature of bank deposits and the protection afforded them, and the process of clearing and collecting checks.

Third, to describe contemporary banking institutions and banking practices. The loan and investment operations of the commercial banks are examined, and the development of the national banking system and the Federal Reserve System and its policies are surveyed. Thus a sound basis for understanding current banking events and problems and also a background for study of the complex questions relating to modern central banking and monetary theory are provided.

The second major division of the book deals with modern monetary theory and problems. The reader is guided through the recognized theories of money and prices, with emphasis upon their complementary rather than their controversial nature. An attempt is made to harmonize the several approaches and to use them in elucidating the central problem of price level behavior. Considerable space has been devoted to the basic question of international price relationships and equilibrium, under both gold and paper currencies, as a basis for understanding the merits of the arguments for and against monetary nationalism. Finally,

the question of appropriate monetary and central bank policies is examined, with emphasis upon their contribution to economic stability.

A large part of what appears herein is drawn from the body of common knowledge in the field of money and banking, and its origin cannot be credited to any particular source. However, in some instances material has been quoted and reproduced from other publications. The author gratefully acknowledges his debt to the publishers of such material for their generous permission to reprint it in the present volume.

ROLLIN G. THOMAS

CONTENTS

CHAPTER

PAGE

PREFACE	vii
-------------------	-----

I. THE PLACE OF MONEY IN THE ECONOMIC SYSTEM	1
--	---

Economic disturbances arising from the use of money: The problem raised by the failure of the volume of money to correspond to the needs for it; Some economic effects of changing price levels. The approach to modern monetary problems: Business stability the aim of modern monetary study; The approach to the problem of money.

II. THE NATURE OF MONEY	7
-----------------------------------	---

The work of money: Money as a standard of value; Money as the medium of exchange; Money as the standard of deferred payments. What is money?: A definition of money; Standard money; Inconvertible paper as standard money; The variability of standard money; The relation of the State to standard money; The circulation of standard money. Bank money: Central bank obligations; Demand deposits as money; Time deposits; Effective money. The monetary structure of the United States: The monetary gold; Standard money other than gold; Notes and deposits of the Federal reserve banks; The "effective money" supply of the United States; Types and amounts of money in the United States. The origins of money: Primitive trade and the use of money; Primitive forms of money; The use of metals; The superiority of the precious metals; The stability of value of gold; The general acceptability of gold money. Coinage of money: Free coinage; Limited coinage; Free conversion without free coinage. Inconvertible paper money: Two basic types of inconvertible money.

III. MONETARY STANDARDS	26
-----------------------------------	----

Early monetary standards. Bimetallism: Gresham's Law; The compensatory action of bimetallism; Arguments for bimetallism; Bimetallism in England; Bimetallism in Europe; Bimetallism in the United States. The gold standard: The gold coin standard; The gold bullion standard; The limited gold bullion standard; The place of silver in gold standard countries; Advantages of the gold standard. The gold exchange standard; The Philippine gold

III. MONETARY STANDARDS (*Cont.*)

exchange standard; The Indian gold exchange standard; Other examples of the prewar gold exchange standard; Postwar gold exchange standards; Objections to the gold exchange standard; Central banks and the gold exchange standard; Paper money exchange standards. Managed paper standards: The advantages of pure paper standards; Objections to pure paper currency.

IV. THE BANKER'S PLACE IN ECONOMIC SOCIETY . . . 51

Banks as financial institutions. Economic desirability of financial institutions. Types of financial institutions. Savings banks. The commercial bank. Economic function of commercial banks.

V. THE NATURE OF A BANK . . . 59

Type of organization. Bank stock. The bank statement: The detailed statement; Definition of bank assets; Definition of bank liabilities.

VI. THE BANKER AND CREDIT INSTRUMENTS . . . 70

Types of negotiable instruments. Test of negotiability. Importance of negotiability. Defenses against payment. Material alteration. Indorsement. Liability of the parties.

VII. DEPOSITS 75

Importance of deposits: Deposits and the bank's lending power; Relation of deposits to capital. Obtaining deposits: Competitive methods; Regulation of interest payments; Withdrawal of time deposits. Relation of the depositor to his bank: Creation of a deposit; Obligations of the bank to the depositor; Account analysis; Service charges. Classes of deposits: Time versus demand deposits; Kinds of depositors; Secured and unsecured deposits. Protection of bank depositors: Segregation of thrift deposits.

VIII. THE GUARANTY OF BANK DEPOSITS 93

General problem. Standard by which guaranty of deposits must be judged. Guaranty of deposits and quality of bank management. Effect of guaranty on functioning of banking system. Does public policy require some form of guaranty protection for deposits? Financial burden of guaranty. Experience with guaranty system. The present deposit insurance system: Temporary plan; Original permanent plan; Present deposit insurance; Insurance of mutual savings bank; Federal reserve membership for insured banks; Type of deposits insured; Probable adequacy of insurance fund; The experience of the FDIC; Attempts of FDIC to strengthen insured banks.

CONTENTS

xi

CHAPTER

PAGE

IX. COLLECTION OF CHECKS 109

The clearing house: The clearing mechanism; Methods of settlement; Other functions of the clearing house. Collection of out-of-town checks: Federal reserve collection system; Use of Interdistrict Settlement Fund; Collection of checks without use of Federal reserve bank facilities; Collection of checks by nonmember banks; The exchange charge; Introduction of par collection of checks; Collection of nontransit items; Federal reserve exchange; Telegraphic transfers; Summary.

X. THE BANK'S RESERVES 130

Bank reserves: Size of cash reserves; Form of primary reserves; Importance of vault cash; Legal reserves and working reserves; Legal reserve requirements; Method of computing legal reserve requirements; Methods of adjusting legal reserves; Borrowed reserves; Legal reserve requirements vary with classification of cities; Excess reserves; Criticism of existing reserve requirements; Proposed remedies; Criticisms of proposed reforms.

XI. THE BANK'S SECONDARY RESERVES 141

Relation of primary to secondary reserves. Size of secondary reserves. Composition of secondary reserves. Merits of different types of secondary reserves.

XII. LOANS AND DISCOUNTS 150

Types of loans. The relative importance of customers' loans. Loans on stocks and bonds: Loans for security trading; Commercial loans secured by stocks and bonds. Loans on commodity collateral: Basic commodities used as collateral; Problems of commodity collateral; Bills of lading; Warehouse receipts; Trust receipt. The unsecured loan: Trade paper; The trade acceptance.

XIII. LOANS AND DISCOUNTS (CONTINUED) , , . . . 168

Accommodation paper. Single-name paper. Borrowers' statements. The line of credit. The maturity of commercial bank loans: Short-term loans; The term loan. Consumer financing by commercial banks. Real estate loans: The place of real estate loans in bank portfolios; Mortgage trust certificates; Should banks make real estate loans? Legal regulation affecting bank loans: Limits on loans to one borrower; Loans on a bank's own stock; Real estate loans; Loans to executive officers and affiliate and security loans.

XIV. BANK INVESTMENTS 187

Volume of investments. Banks as bond buyers. Evaluating the bond account. Liquidity of bond investments.

XIV. BANK INVESTMENTS (*Cont.*)

Repurchase agreements. Legal regulation of bank investments. Administration of the bond account. Losses on bonds and loans.

XV. THE BANK'S PORTFOLIO 203

Requirements of a bank's portfolio. Self-liquidating loans. The continuous borrower's paper. Fixed capital loans. Shiftable versus self-liquidating loans. Objection to fixed capital loans. Effects of the relative growth of fixed capital loans.

XVI. BANKERS' ACCEPTANCES 212

Borrowing with the use of bankers' acceptances. Regulations governing acceptances. Accepting banks. Acceptances for financing imports. Acceptances for financing exports. Other uses for acceptances. Importance of bankers' acceptances.

XVII. THE VOLUME OF BANK CREDIT 219

Factors determining the volume of bank credit: Multiple expansion of bank credit on the basis of new reserves; Contraction in volume of bank credit. Checks on the expansion of bank credit: Relation of time to demand deposits; Demand deposit currency. Elasticity of the supply of bank credit. The relation of central banks to the expansion of bank credit: Reserve ratios and the volume of bank credit. Economic effects of commercial banks: Bank credit and the supply of capital; Forced saving; Advantages of bank deposit and note currency substitutes for specie.

XVIII. THE EARLY BANKING SYSTEM OF THE UNITED STATES 236

Source of banking institutions. Banking before the Civil War: Problem of incorporation; Advantages of note issue; Evils of bank note currency; Evil effects of unregulated note issue; Experience of Boston banks; Action of the New England Bank; The Suffolk Bank; Need for regular presentment; The First Bank of the United States; The Second Bank of the United States; The Safety Fund System of New York; The free banking system; Evils of free banking; Examples of good banking during period; Summary.

XIX. THE NATIONAL BANKING SYSTEM 247

Congressional provisions for a national currency. Provisions of the National Banking Act. Reaction to the national banking law. Further modifications of the law.

CONTENTS

xiii

CHAPTER

PAGE

XIX. THE NATIONAL BANKING SYSTEM (*Cont.*)

National bank notes after 1932. Expanding the powers of national banks. Difficulties arising under the National Banking System: Seasonal variations in business; The movement of excess and legal reserves to the money centers; The result of loan contraction by New York banks; The alternatives to loan contraction; The need for elasticity. How can a banking system be made elastic?: Why national bank notes were inelastic; The real source of elasticity of credit and currency; Treasury aid to banks; Clearing house loan certificates; Clearing house checks; The natural elasticity of a banking system; Emergency currency under the Aldrich-Vreeland Act of 1908; Need for a central bank.

XX. THE FEDERAL RESERVE SYSTEM 263

The birth of the Federal Reserve Act. The Federal reserve banks: Capital of the Federal reserve banks; Deposits of the Federal Reserve Bank; The profit motive and the reserve banks; Reserves of the Federal reserve banks. Contact of the Federal reserve banks with the money market: Direct advances to banks; Open market operations; Direct loans to individuals. Rediscounting: Who may rediscount; Application for rediscount; Eligible paper. The theory of eligibility: Should eligible paper be self-liquidating? Borrowing on collateral notes: Ordinary borrowing; Relative importance of rediscounting and direct borrowing on collateral notes by member banks; Emergency borrowing; Borrowing on noneligible paper under Section 10b; Marginal collateral; Collection of advances to members; Direct loans to industry.

XXI. THE FEDERAL RESERVE SYSTEM (CONTINUED) 287

Federal reserve bank obligations. Federal reserve notes. Significance of collateral behind Federal reserve notes. Federal reserve bank notes. Federal reserve bank management: The boards of directors of the Federal reserve banks; Management of Federal reserve bank branches; The Board of Governors; Powers of the Board of Governors; The Open Market Committee; The Federal Advisory Council. State bank membership: State bank membership during the First World War; State bank membership after the First World War; Present requirements for state bank membership; Advantages of state bank membership; Objections to membership.

XXII. FEDERAL RESERVE CREDIT POLICY 304

Primary and secondary credit expansion. Methods of control: Power to control the volume of member and non-member bank credit; Checks upon applications for reserve credit; Discretionary control of the volume of rediscount-

XXII. FEDERAL RESERVE CREDIT POLICY (*Cont.*)

ing; The rediscount rate as an instrument of credit control; Open-market operations as an instrument of control; Sentiment against continuous borrowing by banks; Control by changing member bank reserve requirements; Summary; Effect of government fiscal policy on bank credit. The standards of central bank policy: The reserve ratio; Stabilization of business conditions; Stabilization of prices. The credit policies of the Federal Reserve System: Policy from 1914 to 1921; Policy from 1922 to 1923; Guides to credit policy in 1923; Credit policy from 1924 to 1927; Credit policy from 1928 to 1929; Policy from 1930 to 1933; Policy from 1933 to 1937; The Treasury's gold sterilization policy; The "flexible open-market portfolio" policy of 1939; The Special Report to Congress; Resistance to inflation in 1941.

XXIII. FOREIGN BANKING SYSTEMS 336

The Canadian banking system: The chartered banks; Note issue; Canada's need for a central bank; The Bank of Canada; Regulation of banks; Other financial institutions. The English banking system: The joint stock banks; The deposits of the joint stock banks; The reserves of the joint stock banks; Loans and investments of joint stock banks; The accepting banks; The discount market; The Bank of England. The French banking system: The Bank of France; The great credit banks; Other banking institutions. The German banking system: The Reichsbank; Other public banks; Private credit institutions. Summary: Relation of banks to industry; Degree of supervision; Relation of the central bank to the money market.

XXIV. FOREIGN EXCHANGE 359

The problem of financing foreign trade: Financing goods in transit; Financing exports on credit; The seller's protection. Foreign bills of exchange: Nature and origin of foreign bills of exchange; Commercial bill of exchange; Bankers' bills; Time bills; Use of bills of exchange in international settlements. The rates of exchange: Meaning of foreign exchange rates; Maturities of bills and the rate of exchange; Origin of the bill and the rate of exchange; Factors affecting the basic rates; The gold points; Method of computing gold import and export points; Cost of shipping gold; Paper currency exchange rates. Use of letters of credit and bankers' acceptances: Bank credit substituted for individual credit; Letter of credit; Import and export letters of credit; Letters of credit for financing shipments between foreign countries; The banker's acceptance; Finance bills and loan bills; Forward exchange. Arbitrage and three-cornered exchange: Arbitrage; Three-cornered exchange. Sale of foreign exchange by inland banks. Foreign banking units of Amer-

CONTENTS

XV

CHAPTER

PAGE

XXIV. FOREIGN EXCHANGE (*Cont.*)

ican banks. The Federal reserve banks and the foreign exchange market.

XXV. TRUST COMPANIES 381

Fiduciary relationships; The trust relationship; Executorship and administratorship; Guardianship and conservatorship; Agencies and custodianships; Escrow agreements; Trustee under bond issues; Classification of fiduciary activities; Advantages of corporate trustees; Objections; Advantages to banks in having trust departments; The common trust fund; The concentration in trust company business. Trust company powers of national banks: Origin of trust company powers of national banks; Effect of mergers on trust powers. Earnings of trust departments: Fees.

XXVI. CONCENTRATION IN BANKING CONTROL . . . 397

Large-scale banking: Affiliated banks and corporations. Methods of concentration of control: The holding company; Depression experience of group banking; Advantages claimed for holding company banking; Objections to holding company banking; Branch banking; Advantages of branch banking; Objections to branch banking; Chain banking; Relation of branch to group and chain banking; Legal status of branch banking; Legal control of holding company banking; Separation of security companies from member banks; Separation of bank stock from stock of other corporations; Regulation of interlocking directorates.

XXVII. BANK FAILURES 413

The banking holiday. Causes of bank failures: Relation of size to failure; Failure rate of national banks and others; Branch banking; Stockholders' equity in banks as related to failure; Conclusion. Rehabilitation of banks: Sale of capital obligations to the RFC; Rehabilitation of closed banks; Liquidation in the absence of reorganization.

XXVIII. MONEY MARKET MIDDLEMEN 431

Stock market brokers: Brokers borrow to re-lend; Method of making brokers' loans; Brokers' loans for others; Relation of the customer to the broker. The finance company: The discount company; The automobile finance company; Economic reasons for finance companies. Dealers in bankers' acceptances: The acceptance market; The acceptance dealer. The commercial paper market: Commercial paper; Commercial paper houses; Regulation of open-market borrowers; Financing the commercial paper house.

XXIX. AGRICULTURAL CREDIT 442

Long-term credit institutions: The Federal land banks; National farm loan associations; Security for loans made at land banks; Emergency status of national farm loan associations; Source of land bank funds; Emergency financing by land banks; Emergency financing by the Land Bank Commissioner; The Federal Farm Mortgage Corporation; Other emergency agricultural loans. Intermediate credit. Improved short-term credit facilities: Production credit corporations; The banks for co-operatives. Management of the farm credit system. Economic importance of a Federal-sponsored credit system.

XXX. PRICE MOVEMENTS AND THEIR CONSEQUENCES 456

The measurement of price changes: The index number as a device for measuring price movements; The choice of prices to be measured; Measuring the purchasing power of money; The construction of index numbers of prices; The choice of the base period; The method of construction of index numbers; The aggregate type of index number. Price dispersion: Dispersion of individual prices. The effects of changes in the price level: Effects of price changes upon income distribution between debtors and creditors; The effects of price changes upon business incomes; The effect of changing prices on wage earners; Long-run price changes and business activity; Objections to the conclusion that falling price trends are undesirable; The relation of short-time price fluctuations to business activity; Disturbances to business stability arising from short-run price changes.

XXXI. THE THEORY OF THE VALUE OF MONEY . . . 476

The importance of the theory of the value of money. Methods of approach. The demand for money: The demand for money, transactions approach; The cash-balance approach; The application of the cash-balance theory of the demand for money; Factors affecting the demand for consumer cash balances; Factors affecting the demand for cash balances by businessmen.

XXXII. THE THEORY OF THE VALUE OF MONEY (CONTINUED) 485

The quantity theory: The equation of exchange; The quantity theory of money; Introduction of bank credit into the quantity theory; Assumptions involved in using the expanded form of the equation; Central banks, the volume of money, and the price level. The quantity theory applied directly to M and M' : Assumptions required; The theoretical case for short-run or cyclical

XXXII. THE THEORY OF THE VALUE OF MONEY (CONTINUED) (*Cont.*)

equality of changes in V 's and T ; Statistical measures of the short-run relation of V to T ; The control of prices in the light of Snyder's theory; Limitations on the application of Snyder's theory; Criticisms of Snyder's findings; The relation of velocity of circulation of money to changes in the volume of transactions during acute depression and recovery; The effect of velocity of circulation of money during periods of acute inflation. The cash-balance equation: A comparison of the transactions equation with the cash-balance equation. Limitations of the equations of exchange: Criticisms of the equations of exchange.

XXXIII. THE INCOME APPROACH TO THE VALUE OF MONEY 504

The income approach to the value of money. Equations expressing the income approach. The relation of the total money income to the quantity of money: The income velocity of money; The importance of the concept of income velocity. Relation among the quantity of money, money incomes, and the price level: Hawtrey's approach: The unspent margin; Traders' outlay, consumers' incomes, and prices. The inequality of saving and investment as the cause of changes in the price level: Why saving and investment become unequal; The incentive to invest; The flow of money income when saving and investment are equal; The behavior of money income and prices when investment exceeds saving; Secondary expansion; The effect of an excess of saving over investment.

XXXIV. CHANGES IN EXPECTATIONS AND OUTPUT: THE MULTIPLIER 518

The equality of saving and investment: Keynes' treatment of saving and investment in his "Treatise"; Keynes' later view of saving and investment; The marginal efficiency of capital; The expansion of new investment. The Multiplier: Phase I: The expansion of consumers' income; The multiplying effect of a shrinkage in new investment; The size of the Multiplier: Phase I; The effects of "leakages" on the size of the Multiplier; The relation of the Multiplier to the price level; The significance of the Multiplier: Phase I; The Multiplier applied to public works. The Multiplier: Phase II: Factors determining the volume of savings: the propensity to consume; The Multiplier: Phase II; The Multiplier when saving exceeds investment; The acceleration principle.

XXXV. THE RATE OF INTEREST AND THE PRICE LEVEL 533

The equilibrium rate of interest: The long-run equilibrium rate; The short-run equilibrium interest rate. The mar-

XXXV. THE RATE OF INTEREST AND THE PRICE LEVEL (*Cont.*)

ket rate of interest: The market demand for investment funds; The market supply of investment funds; The market rate of interest; Deviation of the market rate from the natural rate: corrections; The equilibrium rate and economic equilibrium. The relation of the discount rate to the price level: Methods of approach; The effect of changes in the discount rate on marginal business undertakings; The influence of the discount rate on speculation; Does a rise in the discount rate restrain speculative and commercial borrowing?; Hawtrey's explanation of the operation of the discount rate; Keynes' explanation of the effect of the discount rate; The connection between short- and long-term interest rates; The similarity of movement of long- and short-term interest rates; A comparison of Hawtrey's and Keynes' positions.

XXXVI. THE VALUE OF GOLD MONEY 552

The equality of the money value and bullion value of gold. The relation between the cost of gold and its value. The supply of gold for monetary uses. The monetary demand for gold. The effect of monetary demand on the value of gold when credit money comprises the media of exchange: fixed reserve ratios. The effect of monetary demand on the value of gold when credit money comprises the media of exchange: flexible reserve ratios. The quantity theory versus the bullionist theory of the value of money: A comparison of the quantity theory with the bullionist approach; The bullionist theory of money; An evaluation of the bullionists.

XXXVII. INTERNATIONAL PRICE RELATIONSHIPS UNDER THE GOLD STANDARD 562

Interregional domestic trade and prices: The similarity between domestic and international trade; Interregional domestic price structure; The effects of a shift in demand for the product of a given area in the domestic market; Changes in interregional capital movements; The effect of a failure of crops in one area. International trade and price relationships: The resemblance of international trade to domestic trade. The balance of payments: The nature of the balance of payments; International price equilibrium. The relation between prices at home and abroad: Prices of goods that move in international trade; Home market or sheltered commodities. Gold standard equilibrium and international prices: The effect of conditions of increasing cost; The relation of domestic or sheltered goods to international price movements under the gold standard. Methods of settling accounts in interregional trade: The settlement of domestic interregional debt balances; Settlement of international debt balances under the gold standard.

CONTENTS

xix

CHAPTER

PAGE

XXXVIII. THE MAINTENANCE OF EQUILIBRIUM UNDER THE GOLD STANDARD	578
--	-----

The establishment of international price equilibrium; Reasons for disequilibrium in the balance of payments; Corrective forces arising from international disequilibrium; Spontaneous forces tending to restore international price equilibrium; Spontaneous corrections that may appear in connection with changes in international capital movements; Spontaneous corrections and disequilibrium arising from domestic boom. Gold movements and international price equilibrium; Gold movements and the restoration of equilibrium; Short-term capital movements and the balance of payments; Basic corrections in the balance of payments resulting from changes in discount rates; Gold movements without corrective effects on the balance of payments. The time involved in restoring equilibrium in the balance of payments: The ease of readjustment as related to types of commodities involved in foreign trade; Ease of restoration of equilibrium as related to the magnitude of the disturbances; A comparison of the speed of readjustments arising out of spontaneous causes with the rapidity of readjustments arising out of gold movements; Maintenance of international equilibrium without changes in the discount rate; The importance of powerful spontaneous correctives in a successful gold standard world. Heavy unilateral capital transfers: The case of Canada's foreign borrowing, 1900-1913; The necessary causal sequence resulting in international capital movements.

XXXIX. INTERNATIONAL PRICE RELATIONSHIPS UNDER INCONVERTIBLE PAPER CURRENCIES	598
--	-----

The maintenance of equilibrium with pure paper currencies. Purchasing power parity theory of exchange rates: The calculation of purchasing power parity exchange rates; Criticisms of Cassel's method; The price index best suited for calculating purchasing power parity; Deviations from the true equilibrium exchange rate; Corrections when the actual rate deviates from the true rate of exchange. The balance of payments theory of exchange rates: Purchasing power parity theory of exchange rates; The balance of payments theory. Interrelation of prices and exchange rates under acute postwar inflation: Postwar inflation in France; The relation between the exchange rate and the price level in postwar Germany; Conclusions regarding the relation between exchange depreciation and internal prices during periods of acute inflation.

XL. CONTROLLED EXCHANGE RATES	616
---	-----

Control under the gold standard. The purpose of exchange control under inconvertible paper currencies: Exchange control to maintain stable exchange rates with sterling; Exchange control to stimulate exports; Exchange control

XL. CONTROLLED EXCHANGE RATES (*Cont.*)

to provide short-run exchange stability; Exchange control to prevent capital exports; Blocking claims of foreign creditors; Official rates of exchange. The exchange control funds: The British Exchange Equalization Account; The American Stabilization Fund; The Tripartite Agreement. Exchange control by direct pressure on the balance of payments: Reasons for the imposition of exchange restrictions during depression; Control of capital exports; Exchange control in England after the outbreak of war, September, 1939; Weakness of the British exchange controls. Blocked currencies; The German Standstill Agreements; Blocked marks; The use of blocked accounts by other countries; The exploitation of creditors through the use of blocked accounts. Bilateral clearing agreements. The effects of exchange controls.

XLI. EXCHANGE DEPRECIATION, 1929-1936 . . . 637

The reasons for exchange depreciation after 1929. Voluntary exchange depreciation: Competitive exchange depreciation; Reasons for voluntary exchange depreciation; Voluntary exchange depreciation and corrections in the price levels; Will voluntary exchange depreciation raise domestic prices? The behavior of prices following currency depreciation: The reasons for apparent imperfect adjustment of prices to exchange depreciation; Behavior of prices in countries with and without exchange depreciation; The consequences of the depreciation of sterling; The consequences of the devaluation of the dollar; An evaluation of exchange depreciation after 1929.

XLII. WAR AND PRICES . . . 654

The increase in governmental expenditures. Arguments for financing wars by borrowing: Borrowing to postpone the cost of the war; The importance of the inflationary results of borrowing; Arguments against borrowing to finance wars; The effect of war upon consumers; Why borrowing is inflationary; Business inflation during war. The position of neutral countries: Inflation in neutral countries. Abandonment of the gold standard during war: The gold standard no protection against war inflation; Why war leads to the abandonment of the gold standard; The abandonment of gold after the outbreak of war in 1914; Pegging the exchange rates; Sweden's gold exclusion policy. The avoidance of price inflation: The prevention of an expansion in the quantity of money; The place of price controls in avoiding inflation. The control of prices: The economic function of high prices; Price control during 1917-1918; Results of price control, 1917-1918; The problem of price control after 1940. Postwar price movements: The causes of the postwar inflation.

**XLIII. RESUMPTION OF THE GOLD STANDARD AFTER THE
FIRST WORLD WAR 681**

Objections to a return to gold after the First World War. Deflation versus devaluation as a means of re-establishing the gold standard: The case for devaluation; The case for deflation. The stabilization of the German currency: Postwar inflation and the reparations; The Rentenmark. The stabilization of the French franc: Inflation after the war; De facto stabilization; The undervaluation of the franc. England's return to gold in 1925: The problems involved in the return to the old gold parity; Was the pound overvalued? The return to the gold standard in other countries.

XLIV. THE ADEQUACY OF THE GOLD SUPPLY 691

The gold required for long-run price stability: Estimates of the secular trend of production and trade; The supply of gold required for secular price stability: Cassel's calculation; Some criticisms of Cassel's estimate of the "normal" gold supply; Kitchen's estimate of the monetary gold supply needed to give stable prices; Wilcoxon and Hardy's estimates of the "normal" monetary supply; Are these estimates of any practical value? The relation of the gold supply to the fall of prices after 1929: Warren and Pearson's requirements for secular price stability; A comparison of the gold-production ratio with prices; The argument that there was an accumulated gold shortage in 1929; Economies in the use of gold. The maldistribution of gold as a cause of the decline in prices after 1929.

**XLV. THE BREAKDOWN OF THE GOLD STANDARD AFTER
1929 710**

The gold standard during the 1920's: The nature of the postwar gold standard of the 1920's; The environment of the postwar gold standard; Postwar international debts; The prevalence of short-term balances; The irregular nature of foreign lending; Rigidity of cost and price structures; Summary. The abandonment of the gold standard by raw-material countries: The Australian experience; The abandonment of gold by Brazil and the Argentine. The breakdown of the gold standard in England, 1931: The British balance of payments; The crisis of September, 1931; The abandonment of gold by other countries; The abandonment of gold by the United States; The abandonment of gold by the European Gold Bloc.

XLVI. RECENT MONETARY EXPERIENCES IN THE
UNITED STATES 722

New Deal emergency measures: The anti-hoarding regulations of March 6, 1933; Regulations on foreign exchange and gold exports; The Thomas Amendment to the AAA. The abandonment of gold: The removal of the right to export gold to support the exchange value of the dollar; The reasons for the abandonment of gold; The gold purchase plan; The devaluation of the dollar; The theory behind the devaluation of the dollar; The results of devaluation efforts on the price level; The repeal of the gold clause in contracts. The silver question: The Silver Purchase Act of 1934. The United States gold problem: The effect of capital imports on the gold supply; The favorable merchandise balance and gold imports; The inflation aspect of the gold problem; The problem of excess reserves; The growth of deposits and the danger of inflation; The economic cost of our gold imports; Proposals to stop gold imports.

XLVII. MONETARY POLICY: INDEPENDENT CURRENCIES
VERSUS AN INTERNATIONAL STANDARD . . 740

An international monetary system. Difficulties arising under an international gold standard. The case for monetary nationalism: The question of increased rigidity of prices; Economic stabilization and independent currencies. Domestic stabilization under an international standard: Secular price trends and domestic stabilization; Domestic cyclical stabilization and the gold standard. Monetary management through international co-operation: Some difficulties of international co-operation; Possible methods for international co-operation. Some objections to independent currencies: The inflationary bias of flexible exchanges; Independent currencies and long-term lending; Independent currencies and short-term capital movements; Independent currencies and seasonal factors; Independent currencies and the influence of foreign cyclical price movements; Conclusion.

XLVIII. INSTRUMENTS AND METHODS OF INTERNAL
MONETARY MANAGEMENT 758

The central bank as an instrument of monetary control: Central banks' contact with the money market; Weapons of control of the Federal reserve banks; The effectiveness of central bank credit policy. The fiscal operations of the government as an influence in credit control. The stabilized dollar: Fisher's plan for stabilizing prices; Criticisms of the stabilized dollar, Control of prices

XLVIII. INSTRUMENTS AND METHODS OF INTERNAL
MONETARY MANAGEMENT (*Cont.*)

through control of foreign exchange rates. 100 per cent money: The criticism of fractional reserves; Proposed methods of providing banks with 100 per cent reserves; Time deposits and loans under the 100 per cent money plan; Criticisms of 100 per cent money. Government investment as an instrument of control: The requirements for effective use of public works. Composite commodity units as the basis for paper currency: A stable money based on commodities; Objections to the plan.

XLIX. STANDARDS OF MONETARY AND CREDIT POLICY:

QUALITATIVE STANDARDS 774

The qualitative standard of credit policy: The Bullion Report; The self-liquidating commercial loan or "banking theory" of credit policy; The "currency school"; Modern application of the "banking theory"; The weakness of the banking principle of credit control.

L. QUANTITATIVE STANDARDS OF CREDIT POLICY . 780

The choice of price levels: The cost of living index; The general price index; The wholesale price index. Stable wholesale prices as the goal of credit policy: Some objections to stable wholesale prices; The inflationary effects of stable prices; Stable prices and equality of savings and investment; Slowly rising prices; Slowly falling prices. Neutral money: The requirements for a neutral money; Neutral money and a growing population; Neutral money policy not suitable for a country on an international currency system; The objection to fixed money incomes; The criteria for administering a neutral money; Deflationary effects of neutral money due to monopoly and unequal rates of economic improvements. Constant per capita money income versus stable prices: The avoidance of inflation under stable prices; The short-period aspect of price stabilization. Summary of the problem of monetary policy.

INDEX 797

CHAPTER I.

THE PLACE OF MONEY IN THE ECONOMIC SYSTEM

AN ECONOMIC system based upon specialization requires some mechanism for effecting an exchange of goods and services among the specialists who make it up. Even in a relatively simple society where every producer works for himself at his own specialized trade, goods must be stored, transported, and exchanged. To carry out these functions effectively, money comes into use. The use of money provides both a convenient standard for comparing values of things to be exchanged and a medium whereby the exchanges may be carried out. The use of a medium of exchange avoids that difficult problem of barter sometimes referred to as "double coincidence of wants." When money is used as a medium of exchange, it is unnecessary to find another person who not only wants what one has but at the same time has what one wants. Instead, one may sell his products for money and later spend the money for a wide variety of things as needs arise.

If money is essential to a well-organized system of exchange in a society devoted to simple specialization by crafts, it is even more indispensable in the complex specialization of modern capitalism. This fact becomes clear when one contemplates the difficulties which would be involved if employers were compelled to pay "in kind" (or in their products) rather than in money for the services of the several factors of production, including large groups of laborers performing highly varied work. If the product is a service, such as transport, for example, the impossibility of making payment in the product itself is entirely clear. Likewise, the assembly of real capital goods in the form required for modern industry could hardly be accomplished on a barter basis.

The importance of money in economic society cannot be adequately visualized by merely thinking of it as a convenient medium of exchange which helps to overcome the inconvenience

of barter. The impact of money and the monetary system upon the economic world is vastly greater than this. Money incomes become a primary economic consideration in the lives of men. A vast money income, the spending of which may be directed first one way and then another to suit the buyers' fancies, enables consumers to record their choices in the market and exert a powerful influence on the character of goods produced. This has a profound effect upon the behavior of our dynamic industrial society. Not only are personal incomes and expenditures calculated in terms of money, but also all business calculations are reduced to monetary terms. Because of people's preoccupation with money incomes, they frequently err in their economic calculations. It is easy to forget that one's *real* income, or what one's money will buy, is the important thing rather than *money* income. The objectionable features of price inflation, therefore, are sometimes concealed by the accompanying rise in money incomes.

Economic Disturbances Arising from the Use of Money

Under a simple barter system, however inconvenient, the exchange of goods for goods would be directly under the control of the specialized producers concerned. Unless a producer is willing to extend credit or make a gift, parting with his goods by barter requires that he take another's goods in return. Only a change in the traders' desires for each other's goods would interfere with the normal exchange process. Under such circumstances one may truly say that goods are exchanged for goods and therefore the production of goods creates a demand for other goods. But this is not the case when money is introduced into the exchange system. When acting as a medium of exchange, money by its very nature must be capable of becoming a storehouse of values which may be drawn upon when need arises. Goods and services are exchanged for money, which in turn may be held until an object of suitable expenditure appears. This in itself need cause no trouble in the normal process of exchanging goods and services so long as no extraordinary reason appears for postponing the spending process. But at times these extraordinary reasons for holding money do appear, with disturbing results to the functioning of the economic system. For instance, some who receive money income normally devote a substantial part of that income to the purchase of capital goods or claims to capital goods in the form of securities. This is true both of private investors and of corporations which withhold income from

stockholders for direct reinvestment in the firm. But let circumstances arise which reduce the apparent desirability of purchasing capital goods out of current income and there may result a drastic reduction in money spent. The same situation exists in the case of durable consumers' goods the purchase of which may be readily postponed. The amount of money income spent for both capital goods and durable consumers' goods may fall off sharply in the face of a decline in profit prospects or a prospective decline in the price level which carries with it the obvious advantage of postponing purchases until lower prices become a reality. The paralyzing effect of such hoarding upon industry and employment is seen in the well-known form of business depression.

The problem raised by the failure of the volume of money to correspond to the needs for it. In yet another way monetary developments may lead to disturbances in the operation of economic society. Monetary systems frequently fail to fit themselves neatly into the monetary job at hand. For example, gold standard countries are constantly exposed to the possibility of a rise or fall in the world price level due to the failure of the gold supply to increase at the appropriate rate corresponding to the growth of monetary requirements. Thus, a lagging gold supply tends to induce long-run falling prices, while an excessive supply of gold promotes rising price levels. The problem of having the "right" supply of money is further complicated by the fact that in monetary systems such as ours effective money includes not only gold and its direct representatives (and other forms of standard money) but also bank deposits subject to check. The latter forms of money are at times subject to substantial short-run variations in volume, arising from changes in the willingness and ability of banks to extend credit by expanding loans and investments, and from changes in the desire and ability of businessmen and other individuals to borrow. The price levels of gold standard countries, therefore, are exposed (1) to long-run variations arising from haphazard fluctuations in the gold supply and (2), along with countries using inconvertible paper, to short-run variations due to the fluctuations in the volume of bank credit money based upon available legal reserves.

Some economic effects of changing price levels. Some of the evil effects of changing price levels have already been indicated in the earlier discussion of the tendency for falling prices to cause a shrinkage in the volume of spending for durable goods. The depressing effect of falling prices upon business activity is ac-

centuated by the stickiness of some production costs (wages, interest payments, and so forth) which encourages businessmen to reduce output whenever possible rather than to continue to operate at lower prices.¹

Rising prices likewise bring disturbances. Profits tend to become excessive when prices are rising and thus create an unreal but glowing sense of prosperity in the minds of businessmen. This occurs largely because of the stickiness of wage and interest costs, which lag behind commodity prices on the upswing as well as on the downswing. The resulting windfall profits enjoyed by business are a temptation to overconfidence. Poor managers, their errors concealed by the profits of rising prices, gain and retain control over a large number of business enterprises and prove a source of difficulty later on when their wholesale failures follow a reversal of the price trend. But even more important, from the standpoint of stable business, is the fact that windfall profits either deceive good businessmen in respect to future prospects, or tempt them beyond their strength of resistance to expand the scale of their operations in order to obtain a lion's share of profits. Thus the competitive spirit, bolstered by the optimism from windfall profits, tends to lead to a rate of expansion of capital equipment greater than that called for by basic economic conditions and greater than can be continuously maintained. The inevitable reversal which follows such an excessive rate of expansion is an important cause of depression. This must not be taken to mean that money is the root of all cyclical evil in our economic world. But it cannot be denied that monetary phenomena in the form of changing prices not only permit and accompany cyclical disturbances but also to a considerable degree contribute to them. Historically speaking, the growth of recurrent periods of prosperity and depression parallels the growth in importance of the use of money.²

The Approach to Modern Monetary Problems

Business stability the aim of modern monetary study. The method of approach to monetary problems has been somewhat modified by an appreciation of the fact that there is an intimate connection between monetary and price changes and business instability. Before the disturbances of the First World War (1914-

¹ This is especially true when competition is limited by the use of brands or by the existence of a few large-scale producers in the field.

² Mitchell, Wesley C., *Business Cycles, The Problem and Its Setting*, New York, National Bureau of Economic Research, Inc., 1930, p. 62.

1918), monetary problems were visualized as being primarily concerned with (a) the relation of the quantity of money to the price level, including historical examples of currency inflation, and (b) the inequities arising from the changes in the distribution of wealth and income. These disturbances in the distribution of income result from the dispersion among individual prices which accompanies general price movements. The relation of price changes to cyclical changes in business activity was largely disregarded. A good deal of emphasis was placed upon attempts to prove or to disprove the quantity theory of money by resort to both theoretical argument and historical example.

Current monetary literature by no means disregards the burdens placed upon debtors, creditors, wage earners, and businessmen arising from changing price levels. Nor is there complete unanimity in respect to the usefulness of the quantity theory as an explanation of price changes. The point of emphasis, however, has shifted largely to the attempt to discover some method of avoiding cyclical fluctuations through monetary control. The modern goal of monetary theory is to discover a monetary system which will permit and promote a reasonable degree of business stability with full employment.

The approach to the problem of money. The study of money may properly be directed at the following problems:

1. The correct causal relations between money, bank credit, and the general price level must be discovered. This involves an examination of the quantity theory of money in its more refined forms to find the possibilities of controlling general prices by controlling the monetary and credit system. It is assumed, of course, that monetary control can actually be established.

2. Available methods for exercising control over the volume of money and credit must be evaluated and consideration given to the question of control over the use or quality of bank credit.

3. Criteria for monetary control must be established. Merely to set out to "stabilize business activity" is not sufficient. Conclusions must be reached as to what monetary and price situation will actually be most conducive to the ultimate aim of full employment and business stability. There is the question of whether a quantitative standard should be set up in the form of a stable price level or whether qualitative standards should be relied upon.

4. Granting the possibility of achieving a managed independent currency, it must then be determined whether or not internal

or domestic stability can be made compatible with an international monetary standard such as gold.

5. Finally, numerous specific questions require examination, including, among others, such matters as international price relationships, exchange depreciation, and the breakdown of the gold standard.

The satisfactory exploration of these problems requires an understanding of the operation of the banking system, which is intimately related to the monetary system.

CHAPTER II

THE NATURE OF MONEY

The Work of Money

TO UNDERSTAND the requirements of good money, one must examine the type of work which it is expected to perform. Money work is of several different kinds.

Money as a standard of value. In an exchange society, some standard is needed by which things to be exchanged may be evaluated. The pricing of things in terms of some common denominator can hardly be avoided if accurate and easy comparisons of values are to be made.

In the United States, the standard of value is the dollar, now containing $15\frac{5}{16}$ grains of nine-tenths fine gold. When inconvertible paper currency is in use, the standard for comparing the value of things is the paper dollar. It is evident that money is of maximum use as a standard for comparing values only when its own value is reasonably stable in terms of the general mass of things to be exchanged. We are accustomed to think of the standard units of weights and measures as constant, and properly so. We tend to look upon the standard of value also as constant, but to do so is often a grievous error.

Now it frequently happens that money which is acting as the basic standard of value is not at the same time acting as the medium of exchange. Indeed, the two functions are not at all inseparable. In primitive societies, for example, cattle were sometimes used as a standard of value but were not necessarily used as a medium of exchange. Among some American Indians, the beaver skin was the unit of value and was the basis for fixing the exchange ratio between goods exchanged on a barter basis.¹ In the use of modern currencies, too, the standard money frequently does not enter directly into exchange transactions. This is true not only in the barter transactions in which farmers'

¹ Cf. Laughlin, J. L., *New Exposition of Money, Credit, and Prices*, Vol. I, University of Chicago Press, 1931, pp. 12-14.

wives trade eggs for groceries at the local store, and in credit transactions such as those in which the share cropper purchases supplies and later pays in crops, but also in the elaborate clearing transactions on the security exchanges where only a small residual is settled in cash. Moreover, in modern economic society, the standard monetary unit, particularly if gold, is seldom put into actual circulation at all. Instead, more convenient substitutes in the form of paper money and checks on bank deposits furnish the medium of exchange.

Money as the medium of exchange. Acting as a medium of exchange is a second function of money. It is not enough that there be a basis of comparing the value of things to be exchanged. If the troublesome problem of the "double coincidence of wants" is to be avoided, some readily acceptable thing must be available as a go-between to bring about a smooth and effective exchange of goods. Some form of money, therefore, must be called into use to act as the intermediary. The media of exchange may include both standard money itself and its various paper and credit substitutes.

A good medium of exchange needs (1) enough stability of value to make it a good store of value and (2) sufficiently attractive qualities to make it generally accepted by the public. The first requirement, stable value, arises from the need of sellers of goods and services for a means of holding their purchasing power in suspension until such time as they wish to purchase other things. Every income receiver, whether a laborer, a salaried worker, a capitalist, or an active business enterprise, has need for the use of money as a store of value. This need exists because of the impossibility of synchronizing exactly all income and expenditure.² If the economic system is to operate properly, it is necessary that money adequately perform its function as a store of value. This, of course, requires that money shall be sufficiently stable in value to permit its being held without its holder's becoming either unjustly enriched or impoverished by the process. If money is gaining in value (prices are falling), hoarding results, with its disturbing effects on production and trade. On the other hand, a falling value of money (rising prices) makes people unduly hasty in getting rid of it. We have all had the experience of spending our money hastily (and perhaps unwisely)

² It is impossible to imagine any way in which money could act as a medium of exchange without also being a store of value. Its very existence and use requires that someone hold it, and in the hands of the holders it is a store of value.

to escape rising prices, and of postponing purchases in anticipation of lower prices. An extreme case of this occurred in Germany in 1923, when money lost its value so rapidly that people receiving cash incomes could not spend their money fast enough to avoid serious losses in buying power. In the end, the currency became so unacceptable that in some instances it lost its character as a medium of exchange, and exchanges were accomplished by resort to the relatively stable foreign currencies or by barter.

Besides reasonably stable value, money must have general acceptability if it is to function as a medium of exchange. Probably it was the latter quality which first commended certain commodities to mankind for use as money.

Money as the standard of deferred payments. A third basic function of money, closely related to the two previously mentioned, is that of acting as a standard or unit of account for contractual credit transactions. Purchases of goods in modern economic society are commonly made with the use of credit, extended either directly by the seller or indirectly by the loan of money. Payment must eventually involve the use of money. To use a common phrase, money is the "standard of deferred payment." Not only credit transactions but all contracts involving future payments are framed in terms of money. Stability of value in terms of other economic goods is also required for the proper fulfillment of this monetary function. In truth, money's function as a standard of deferred payments provides a more exacting demand for stability of value than that arising from its other functions. Short-run stability in the value of money is sufficient to meet the requirements as a medium of exchange and to prevent undue variations in people's willingness to hold money. This requires only an avoidance of sharp and short-run changes in the price level. But to satisfy the requirements of a good standard for credit and contract payments, the value of money must be stable enough over long periods to avoid windfall profits and losses arising from the failure of credit and other contract obligations to adjust quickly to general price changes. Further, it should be sufficiently stable to avoid unjust enrichment and impoverishment of debtors and creditors.

What Is Money?

A definition of money. Although we have been examining the characteristics and functions of money and some of the peculiar economic problems associated with its use, we have avoided

any attempt to define it. Generally, definitions are troublesome things, and that of money is no exception. The various monetary functions, as we have already seen, may be so divided among different classes of money that it is of little use to try to contrive an all-inclusive definition. Rather, a frank recognition of the several classes of money and a series of workable definitions which fit the actual monetary situation will simplify and clarify the answer to our question of what is money.

Standard money. As the term is used today, *standard money* is the monetary unit which is recognized by the State as the ultimate basic standard of value. Direct or indirect convertibility into standard money assures a uniform value to other forms of money. Historically, standard money is a commodity, normally gold or silver or both. From 1792 until 1873, both gold and silver dollars were standard money in the United States. Since 1873, the gold dollar has been our standard monetary unit, although silver dollars, coined under the silver purchase acts of 1878 and 1890, and silver certificates issued under the Silver Purchase Act of 1934, are quasi-standard, owing to their anomalous position of being legal tender and not directly redeemable in gold.

In 1933 and 1934, Congress authorized the President of the United States to fix the weight of the gold dollar in grains nine-tenths fine, and such a gold dollar was made the standard unit of value. All forms of money issued or coined by the United States were to be maintained at a parity with this standard, and it was made the duty of the Secretary of the Treasury to maintain such parity. The weight of the gold dollar was not to be reduced below 50 per cent of its weight as of 1933. Nor could the weight of the gold dollar be fixed in any event at more than 60 per cent of its 1933 weight.^a

Inconvertible paper as standard money. Standard money need not necessarily be gold or silver, however; nor does it need any commodity value. There exist numerous examples of standard money without commodity value. Government notes (greenbacks) were issued during the Civil War and promptly became inconvertible and remained so until 1879. Since greenbacks, which constituted the money in general circulation, could not be converted into gold dollars, it follows that this inconvert-

^a The Thomas Amendment to the Agricultural Adjustment Act of May 12, 1933, as amended by the Gold Reserve Act of 1934. The power of the President to vary the gold content of the standard gold dollar terminated in 1939 under the original law as amended in 1934. By act of Congress this power was extended for an additional period ending June 30, 1943.

ible paper money was the standard money during that period. Similarly, in 1933, when the United States Government formally removed the right to convert any form of currency into gold, paper money became the standard. When the gold content of the dollar was reduced from 25.8 grains of nine-tenths fine gold to $15\frac{1}{2}$ grains by Presidential proclamation on January 31, 1934, a conversion of paper currency into gold was partially restored, since the privilege of buying gold at \$35 per fine ounce was granted for industrial purposes and for export, at the option of the Secretary of the Treasury.

The variability of standard money. But the standard money which appeared after January 31, 1934, was unlike the old standard gold dollar. The new departure was referred to by the Secretary of the Treasury as a "streamlined dollar." Its size in terms of gold was not fixed by law but was subject to change by Presidential proclamation. In actual fact, however, it was fixed at 59.06 per cent of the old (1933) dollar's gold content, which provided the convenient price of \$35 per ounce for fine gold bullion.

This variation in the standard monetary unit, in respect to both its gold content and its vacillation between convertibility into monetary metal and inconvertibility, provides an illustration of the distinction between the monetary unit which is the standard, in terms of which debts and contracts are settled, and the money itself with which actual payment is made. For example, the dollar is the monetary unit in terms of which are stated various sorts of economic obligations. The satisfaction of these obligations requires the payment of dollars. But the particular *thing* which constitutes the *dollar* is subject to change.⁴ Thus, the dollar as a unit for expressing economic obligations remains unchanged, while the particular standard money in which payment may be made is subject to change at the will of the Government. Standard money, therefore, is the ultimate means of payment for obligations expressed in terms of the unit of account.

The relation of the State to standard money. Standard money in the modern sense requires the sanction of the State.

⁴J. M. Keynes distinguishes between money as a "unit of account" and money which may be used in making payments. He likens this to the distinction between the King of England, a continuous institution, and the particular ruler on the throne at any given time. The latter is subject to change at the will of the State, while the former enjoys continuity of existence. See his *Treatise on Money*, New York, Harcourt, Brace & Co., 1930, Vol. I, p. 4.

This normally would carry with it legal tender power. But when the standard money is uncoined gold bullion, as it often is in modern monetary systems, it has little need to be made legal tender. Rather, legal tender powers are conferred upon paper currencies, with the standard acting as the ultimate redemption unit for all the currencies of lesser status. When the ultimately obtainable currency is itself inconvertible paper, the distinction between legal tender currency and standard money is wiped out, since for all practical purposes any legal tender currency is standard. In modern society the sanction of the State is often a very powerful force in making standard money acceptable. So important is this sanction that some persons hold to the view that money derives its value from the State's stamp of approval.

The circulation of standard money. Under the old gold standard which permitted individuals to obtain gold coins, the standard gold pieces frequently were in actual circulation. The small size and ease of abrasion of gold coins, however, discouraged their circulation. Before 1933, gold certificates, claim checks to gold held by the Treasury, commonly circulated in place of gold coin. Gold certificates are, therefore, called *representative money*, for they stand in the place of the standard gold. Similarly, silver certificates are representative money for the quasi-standard silver dollars. Today it has become the practice to use other forms of currency for actual payments, leaving the standard gold money and its paper representatives to act as reserve or the ultimate redemption basis for nonstandard money.

Bank Money

Standard money itself seldom is used in making settlement of contractual obligations. Instead, *bank money* in the form of demand deposits and bank notes is used. Standard money, therefore, functions merely as the cash reserve of the banking system. In case bank notes cannot legally be issued in sufficient quantity to satisfy the need for currency in hand-to-hand circulation, some standard money must be used for this purpose. This reduces somewhat the volume of bank deposit credit which can be created.

Central bank obligations. All modern countries now have central banks which enjoy the privilege of note issue and which hold the standard money reserves of the banking system. Against these reserves, the central bank may create circulating notes and deposits. This it may do by expanding its loans and investments until its note and deposit obligations are some multi-

ple of its standard money reserves. To the ordinary commercial bank and to the general public, the notes and deposits of the central bank are the equivalent of standard money. Therefore, central bank obligations comprise what might be called *secondary* or immediate standard money, since all obligations of the commercial banks to each other and to the general public may in practice be liquidated by the payment of central bank notes or deposits and need not involve the use of the *ultimate* standard itself.

Demand deposits as money. Commercial banks today have little if any note-issuing power. Nevertheless, by making loans and investments, they can create a large volume of bank money in the form of demand deposits subject to check, based upon a relatively small volume of cash reserves. These cash reserves, as we have just observed, are mainly in the form of central bank obligations. Bank money, then, consists of bank promises, arising out of the loans and investments of the banks, to pay out standard money or other currency on demand. Borrowers receive the proceeds of their loans in the form of *promises to pay* currency rather than in currency itself. Granting that banks command public confidence, their promises are readily acceptable and are actually superior to currency in respect to convenience in transfer and freedom from theft. The bulk of all commercial transactions are settled by the payment of bank money, which therefore may be said to be our primary medium of exchange. Standard money's function is largely that of providing reserves to insure the convertibility of bank money. Nevertheless, when standard money is gold or silver, it is an important medium for settlement of net debts with foreign countries where domestic bank money is not acceptable.

Let us now summarize what we have just said. The bulk of our standard money is used as *ultimate* reserves into which other forms of money may be converted, and does not itself appear in the stream of money payments. The notes of central banks, which constitute one form of what we have called secondary or immediate standard money, are in a large measure actually in circulation. They therefore act as a part of the media of exchange. However, central bank notes which are held as vault cash or till money in the commercial banks are not a part of the circulating media. Finally, demand deposits subject to check (excluding interbank balances) are customarily transferred to make commercial and financial settlements, and constitute by far the largest part of our media of exchange.

Time deposits. Some question may be raised as to the propriety of including time deposits in the category of money. Time deposits hardly qualify as media of exchange, since they are not subject to check and are not transferred from one person to another without first being converted into demand deposit or cash form. However, in one sense they may be said to perform the function of money. They provide their owners with a means of storing up values in what is essentially liquid form.

Effective money. We may define *effective money* as that part of the total supply of money and credit which may actually be used in making money payments. Effective money includes, therefore, (1) standard money in actual circulation; (2) notes of central banks and commercial banks (if any) which are in circulation outside the banks; (3) demand deposits subject to check, excluding interbank deposits; (4) token money.

The Monetary Structure of the United States

Like that of other countries, the present form of our monetary system is the result of a more or less haphazard historical growth. In it one may find reminders of nearly every monetary experience since the Civil War. This is not to say, however, that our monetary structure has never been made the subject of careful study and planning. National bank notes were designed to meet problems presented by a chaotic state bank currency. Federal reserve notes, in turn, were created after serious study of the difficulties which arose in connection with the use of national bank notes. On the other hand, other constituents of our money system arose out of expediency and political compromise. The greenbacks issued during the Civil War and the standard silver dollars and silver certificates issued in response to political pressure of the silver interests well illustrate the haphazard origin of our heterogeneous currency.

The monetary gold. The stock of monetary gold which forms the base upon which our monetary system is constructed does not include all of the monetary gold within our boundaries. Gold held here under "earmark" for foreign governments and central banks, as well as gold in the Treasury against which gold certificates have not been issued, is not a part of the monetary gold base. Most of the Treasury's \$2,000,000,000 in gold comprising the Stabilization Fund, plus any other "free gold" purchased by the Treasury out of existing bank balances, must therefore be classed as outside the monetary system. Gold coins may no longer be minted in the United States. The gold which is the

base of our monetary system must therefore be held as bullion by the Treasury. The Treasury issues gold certificates (or book credits), which are held by the Federal reserve banks as reserve for their notes and deposits. Also, \$150,000,000 in gold is held by the Treasury as a redemption fund for the \$346,000,000 in greenbacks or United States notes outstanding.

Other Government money issues. Because of the peculiar manner in which our monetary system developed, there are other forms of money reserves in the Federal reserve banks in addition to gold certificates. Specifically, these other types are (1) greenbacks, (2) silver dollars, (3) silver certificates, and (4) subsidiary silver, nickels, and one-cent pieces. These types of money do not comprise any very important fraction of the reserves of the Federal reserve banks. For the most part, they are in circulation outside of the Federal reserve banks and act in the same capacity as bank notes.

Notes and deposits of the Federal reserve banks. As we saw earlier, the notes and deposits of central banks constitute a kind of "secondary standard money" for the other banks and the general public. Banks settle claims among themselves by transferring deposits in the central banks, while the notes of the central banks are generally accepted by the general public as the ultimate form of currency. The liabilities of the Federal reserve banks are no exception, for Federal reserve notes make up the bulk of the money in circulation, and their deposits comprise the legal reserves of the member banks.

The volume of deposits and notes of the Federal reserve banks is determined by two things. First, deposits of gold certificates, silver dollars, silver certificates, greenbacks, and subsidiary coin are made by member banks and by the Treasury. Member banks deposit such money as a means of building up reserve balances. The Treasury deposits gold certificates to establish balances in the Federal reserve banks against which it may draw drafts in payment for newly acquired gold. Since gold certificates are not put out into circulation, their issue by the Treasury causes a corresponding increase in the deposits and notes of the reserve banks. The volume of secondary standard money issued by the reserve banks in this way corresponds closely with the volume of basic standard money, particularly that of gold certificates.

Second, the Federal reserve banks expand the volume of their notes and deposits by making advances to member banks and by purchasing United States securities in the open market. The

volume of secondary standard money which the reserve banks may thus create may vary from zero to approximately 3 times their standard money reserves. If the Federal reserve banks make no loans or investments; the volume of secondary standard money is equal to the standard money reserves deposited with them. On the other hand, the maximum of such secondary standard money which the reserve banks can create is set by the legal reserve requirements, which are 25 per cent against Federal reserve bank deposits and 25 per cent against Federal reserve notes.⁵

The "effective money" supply of the United States. The various media of exchange which are actually available for use in making settlements or payments in business and financial transactions of all kinds may be called the "effective money" supply. The largest single type of effective money in the United States consists of bank deposits subject to check. The bulk of the total business transactions in the United States is settled by the drawing of checks upon such deposits. Currency other than demand deposits includes: (1) Federal reserve notes, (2) silver dollars and silver certificates, (3) greenbacks or government notes, and (4) token money, including subsidiary silver.⁶

The volume of demand deposits subject to check is determined by the following basic factors: (1) the volume of cash reserves available to the banks; (2) the required or the customary ratio of cash reserves to deposit liabilities, (3) the willingness of businessmen to borrow at the banks, and (4) the willingness of bankers to lend and to invest in securities. The percentage of cash reserves to deposit liabilities, which the law or prudence requires, fixes the maximum limit to the volume of deposits which the banking system can maintain upon any given volume of available cash reserves. This maximum rises or falls as the supply of cash reserves fluctuates. But the actual volume of deposits which the banks carry may be considerably less than the maximum possible if the banking system were "loaned up." Demands for loans decline during depression. This in itself would not need to cause a shrinkage in the volume of deposits if the banks were willing to replace the disappearing loans with securities. This they are frequently loath to do, although there is

⁵ For a fuller discussion of the expansion of Federal reserve credit, see Chapter XX of this book.

⁶ National bank notes formerly were an important type of currency but have been gradually retired since 1935.

normally some tendency for banks to purchase bonds during depression.

The volume of cash reserves available to the banks is in turn influenced by several things. First, gold imports and exports directly affect the volume of Federal reserve bank deposits and notes, and therefore affect the volume of "secondary standard money" which constitutes the bulk of the cash funds of commercial banks. Second, the expansion and contraction of Federal reserve bank credit, whether through open-market operations or through direct advances to member banks, will affect the volume of commercial bank cash reserves. Third, the changes in public demand for hand-to-hand currency in place of checking accounts affects the volume of cash reserves which remain to support the deposit structure. The requirements for currency in circulation are related to both seasonal and cyclical fluctuations in business, to payroll requirements, and to the public's desire to hoard. When the public wishes more currency, it obtains it by "cashing" part of the bank deposits. This impairs the banks' cash reserves, and unless they have an excess over requirements or can obtain more by borrowing at the reserve banks, they must reduce somewhat their loans and deposits.

Types and amounts of money in the United States. An examination of the following classification of money in the United States will enable one to visualize better the nature of our monetary system. It will be understood, of course, that the amounts given are useful primarily to illustrate the relative proportions of different types of money, for the amounts themselves are subject to change. The amounts given are for dates during the first half of 1941.

MONEY OF THE UNITED STATES

Standard Money

1. Gold held by the Treasury other than to secure gold certificates, plus other cash holdings	\$ 2,300,000,000
2. Held by the Federal reserve banks:	
(a) Gold certificates on hand and due from the U. S. Treasury	\$20,302,000,000
(b) Other cash	309,000,000
3. In circulation:	
(a) United States notes (greenbacks)	307,000,000
(b) Silver dollars	54,000,000
(c) Silver certificates	1,691,000,000

Secondary Standard Money (Federal reserve bank liabilities)

1. Member bank reserve accounts	\$13,120,000,000
2. Federal reserve notes in circulation	6,813,000,000

MONEY OF THE UNITED STATES (*Cont.*)*Effective Money* (available for use of the general public)

1. Currency*	(a) Gold certificates	\$ 63,000,000
	(b) Silver dollars	54,000,000
	(c) Silver certificates	1,690,000,000
	(d) Treasury notes of 1890	1,000,000
	(e) Subsidiary silver coin	438,000,000
	(f) Minor coin	196,000,000
	(g) United States notes (greenbacks)	307,000,000
	(h) Federal reserve notes	6,813,000,000
	(i) Federal reserve bank notes	20,000,000
	(j) National bank notes	147,000,000
Total		\$ 9,729,000,000
2. Deposit currency**:		
	(a) Adjusted demand deposits of member banks	\$29,752,000,000
	(b) Estimated adjusted demand deposits of nonmember banks other than mutual savings banks	4,757,000,000
Total deposit currency		\$34,509,000,000

* The total figures for currency in circulation given here are in excess of the true amount for several reasons: (1) Member banks held vault cash amounting to over \$800,000,000. (2) An undetermined amount was held by nonmember banks. (3) Some currency is outside the monetary system because of (a) export, (b) loss by destruction, and (c) disappearance into collectors' hands.

** Adjusted demand deposits include demand deposits other than interbank and government deposits, less cash items in process of collection.

Estimated adjusted demand deposits of nonmember banks were calculated by applying to total adjusted deposits of nonmember banks the ratio of demand to total deposits for country member banks.

The Origins of Money

We have already examined the types of money that exist in modern economic society. To understand why modern money has assumed its present form, one must know something of its origins and the reasons for the choice and development of present-day standard money. Modern capitalistic society developed under the benign influence of gold and silver money. But these metals did not acquire their monetary status suddenly or by Providential intervention in the economic affairs of mankind. Rather, their use as money came as a gradual development, the roots of which extend back to antiquity.

Because money plays such a vital part in economic processes, it seems certain that some use of money was a prerequisite to the emergence of the modern type of economic society. That it did in fact precede the appearance of modern capitalism is, of course well known, for money in various forms goes back many centuries. Adam Smith, in his *Wealth of Nations*, suggested that money originated in the rational effort of man to meet the necessity of finding some medium of exchange. This view probably places undue stress upon the idea of a rational establishment of monetary systems. A more satisfactory view of the origins of

money may be obtained by examining the primitive money of both ancient and modern times.

Primitive trade and the use of money. A well-developed money could hardly have preceded the appearance of trade. Some writers suggest that trade, developing upon the foundation of property ownership, first may have taken a unilateral form through the plunderings of conquest and the making of gifts. Resistance to the former and encouragement to the latter may have been the source of the appearance of bilateral exchange or barter. The desire to trade with foreigners who could furnish strange and unusual commodities must have provided important incentives to barter for peoples living in a simple and largely self-sufficient fashion.⁷ Barter required methods of measuring both amounts and values. In addition to counting, units of weight were introduced. The carat, it is said, originated from the kernel of the carob bean, while the English troy grain was derived from the weight of a grain of barley. A primitive way of establishing values was to compare the size of things to be exchanged. Strings of cowrie shells called *dewarra* were exchanged, length for length, with fish. More significant in the development of money, however, was the appearance of standards of comparison in the form of some well-known and valuable thing. In warm or temperate climates, for example, the cow or ox was commonly used as a standard of value. The use of numerous other commodities may be mentioned. In the interior of Africa, the slave was used as a standard, with a value of five oxen, one hundred pieces of cloth, or a double-barrelled gun. A string of glass beads was worth a gourd bottle of water, a measure of milk, or an armful of hay.⁸

Primitive forms of money. The basic requirement of a medium of exchange is such popular esteem as to provide general acceptability by the trading public. Things in common demand, whether articles of necessity or ornaments, frequently acquired the status of money. In addition to the ox or the cow, people living in colder areas used such articles as furs, skins, and blankets as money. Salt, weapons, and utensils of various sorts were also used. Hoes and knives are said to have been used as money by the Chinese, and later, through the slow process of evolution, miniature copies of these articles, lacking any utility as commodities, circulated as pure money. Primitive fishermen

⁷ Cf. Helfferich, Karl, *Money*, New York, Adelphi Co. (Greenberg), 1927, Vol. I, pp. 2-7.

⁸ Helfferich, *op. cit.*, p. 9.

sometimes used fishhooks, which, like the Chinese hoes and knives, gradually lost their original value as commodities and shifted into the category of pure money with only the symbolic shape remaining. The early appearance of ornaments in the role of money is illustrated by the cowrie shells, which from ancient down to modern times have been held in high esteem as money among primitive folk. Of this type was the American Indian's wampum, consisting of belts and necklaces of black and white polished shells. Feathers, heads of red-headed woodpeckers, as well as strings of polished shells, served as money among California Indians. In Iceland dried fish and in North America beaver skins, tobacco, and rice were at one time used as media of exchange.⁹

The use of metals. The precious metals seem to have acquired monetary functions among peoples who knew them almost as early as did other commodities. The "talent," a gold unit weighing about 130 grains troy and worth one ox, is referred to in the Homeric poems of about the eighth century B.C.¹⁰ Among the less valuable metals copper, silver, and later iron and tin found use as money. The metals were exchanged not only in the form of implements, utensils, and ornaments, but also in bars, wires, cylinders, and balls. Although these metals possessed monetary functions, they were themselves evaluated at first by weight or measure. Gold dust was sometimes measured by the length of a quill container, and weighing was a common method of evaluating it. Sometimes bars or rings of precious metals were marked at regular intervals to facilitate dividing them into smaller units. It was not until relatively late years that coinage was developed as an aid to the identification of the weight and fineness of precious metals. Although there may have been earlier attempts at private coinage by merchants and goldsmiths who stamped their mark upon metals, it is believed that state coinage began in Lydia about 660 B.C.¹¹

The superiority of the precious metals. The monetary triumph of the precious metals was due to their superiority in monetary uses. This superiority over other commodities can be

⁹ For more complete accounts of primitive forms of money, see J. Laurence Laughlin's *Money, Credit, and Prices*, Vol. I., and Kemmerer's *Money*, New York, The Macmillan Co., 1936, Chapter I. For the original source of much information given by other writers, see W. Ridgway's *The Origin of Metallic Currency and Weight Standards*, 1892.

¹⁰ Laughlin, *op. cit.*, p. 19.

¹¹ Laughlin, *op. cit.*, pp. 53-54. Chapter II contains a detailed account of the early use of metallic money.

readily seen by calling to mind the requirement of a good money. Good money must be relatively stable in value and be generally acceptable. To a very marked degree, the precious metals fulfill these requirements better than other commodities. Since gold, among all the metals, became the monetary choice of very nearly the whole world, let us see to what extent it is deserving.

The stability of value of gold. Of all the various commodities which have at one time or another been used as money, gold probably comes the nearest to being stable in value. There are several reasons for this. First, its durability has caused the accumulation of a tremendous stock of the metal over the years. As a result, variations in the production of gold over a single year or a short series of years cannot modify the size of the stock of gold enough to cause abrupt and serious changes in its value. This is in sharp contrast to commodities which deteriorate rapidly or are completely consumed in short periods of time. The value of such commodities is much more dependent upon short-time changes in production than is the value of gold.

A further reason for the superior stability of the value of gold lies in the nature of its demand for nonmonetary purposes.¹² In industry and the arts, gold is wanted largely for its prestige value and its ornamental uses. Because of this, gold is seldom indispensable but, like other luxuries, it enjoys a relatively elastic demand. A decline in the value of gold, as evidenced by a rise in prices of things not made of gold, causes an increased fraction of the world's newly mined gold to be deflected from monetary uses into industry. This tendency for new industrial users of gold to appear readily with a decline in its value helps to prevent any drastic decline in the value of gold in the face of increased output. Similarly, a decline in gold output and a rise in the value of gold is somewhat offset by a decline in the industrial uses.¹²

Still a third stabilizing influence upon the value of gold is found in the hoarding practices in the Orient. Like industrial uses, gold absorption by Oriental hoards tends to fluctuate inversely with changes in the value of gold.¹³

A fourth force is found in the response of gold production to changes in the value of gold. In this respect, of course, gold is no different from other commodities. When the price level rises, the costs of mining gold rise also. With no change in the dollar

¹² For evidence in regard to the fluctuations in industrial uses of gold, see Lionel D. Edie's *Money, Bank Credit and Prices*, New York, Harper & Bros., 1928, pp. 256-257.

¹³ Cf. Edie, *op. cit.*, p. 259.

value of newly mined gold, rising costs reduce the profits from mining and shut off production in marginal mines. Falling prices, on the other hand, stimulate gold output.

It must be recognized, however, that gold has limitations as well as advantages. Its supply is subject to the hazards of accidental discovery of sources of gold and to the effects of irregular and uncertain improvements in the technique of mining and refining. Moreover, although durability does give a substantial degree of stability to the short-run gold supply, the long-run effects of new discoveries and new techniques may be far from negligible. One must also not lose sight of the fact that the long-run stability of the value of gold is dependent on the relation of the supply of monetary gold to the world's monetary needs. These needs, in turn, depend both upon the growing volume of transactions requiring settlement in terms of money and upon the volume of bank money substitutes for standard gold money which may be available.

The general acceptability of gold money. Public acceptance of any money depends upon a number of considerations. Stability of value is, of course, one of these, because great instability renders money incapable of functioning properly as a store of value. A relatively high value in a small compass is a convenience which adds to the attractiveness of gold money. Yet another favorable characteristic of gold is the ease with which it may be minted into coin and reconverted into bullion form again. Uniformity of quality, ease of identification, and durability are all qualities of gold which enhance its usefulness as money. Finally, one must not neglect the importance of social custom. Certain commodities may acquire a kind of momentum in monetary use which helps to perpetuate such use. The fact that gold has been the customary monetary standard is to a large measure responsible for the esteem which it commands as money. The effect of this can be seen in the refusal of countries which had technically been on the bimetallic standard to continue on that standard when, after a long period during which gold was exclusively in circulation, cheap silver threatened to drive gold from circulation. Today gold retains its monetary value largely because of its customary acceptance as money rather than because of its value for industrial uses.

In these days of paper money and bank credit substitutes for gold, some of the characteristics mentioned above as contributing to the acceptability of gold have lost much of their significance. These substitutes have all the qualities of convenience in han-

dling and use which can be claimed for gold itself, and are in fact superior to gold for domestic use. Even when inconvertible into gold, paper money may remain readily acceptable in the issuing country because it may possess legal tender power and because of habit of use.

Coinage of Money

The advent of coinage marked a very important step in the development of money, for with it money achieved a distinctive place among other goods. When made into the form of coin, money ceased to be merely a convenient commodity for comparing and storing values. The coin itself, bearing the stamp or mark of the State which issued it, came to be the important thing rather than the bullion content. This admiration for the coin itself frequently goes so far that the coin may circulate at a value considerably in excess of its bullion value. The fact that it is money, approved by the State and in customary use, is sufficient to maintain its acceptance at face value within its own country.

Free coinage. In the past, free coinage of the standard monetary metal was a normal characteristic of currency systems. Under free coinage, the money metal or metals may be brought to the mints and converted into standard coins without limit. In the United States before 1933, one could bring to the mint standard gold bullion (nine-tenths fine) and have it converted into coin without expense save the delay involved in the process. If gold in other than standard bullion form was presented to the mint, a *brassage* charge was made to cover the expense of converting the metal into standard bullion.* Sometimes the State charges more than the actual cost of minting the coins. As a result the State makes a profit called *seigniorage*. The coins so minted have a face value somewhat above their bullion value. The free coinage of standard metals is normally accompanied by the right to exchange coin for bullion or the right to convert coin into bullion by melting. It follows, therefore, that the coin value and the value of the bullion content of coins can never be separated by more than the cost of conversion from one form to the other. It is through the free interconvertibility of coin and bullion that the value of money is tied up with the value of the metal itself.

Limited coinage. Although standard money metal may be freely coined, other metals may be converted into coins only at the option of the State. For example, subsidiary silver coins,

*The term *brassage* is used to describe any mint charge not designed to yield a profit to the State.

standard silver dollars, and token five- and one-cent pieces are coined by the Treasury in such amounts as public convenience or public policy seem to warrant. Since there is no privilege of free coinage in such a case, these coins are the result of what is known as "limited coinage." Such coins normally bear a heavy seigniorage charge, or to put it another way, their face value is considerably greater than the value of the metal which they contain. For example, when silver bullion is worth \$.45 per ounce, the silver dollar contains approximately 35 cents worth of silver. Coins issued under the limited coinage principle, therefore, derive their value from the fact that they are directly or indirectly convertible into standard money. In reality they are a form of promissory note written on metal discs instead of being engraved on paper.

Free conversion without free coinage. After the First World War, countries wishing to return to the gold standard economized their limited supply by abandoning the coinage of gold. Instead, they provided that bullion might be freely converted into currency or bank credits by sale to the central bank. Those wishing gold bullion for export or industrial purposes could purchase it at a fixed price from the central bank. In this way gold coin was not allowed in common circulation, yet free conversion from money into bullion and bullion into money was provided. Though technically different from free coinage, the result was similar in that the value of paper currency and the equivalent amount of bullion were always substantially the same.

Inconvertible Paper Money

In the past, standard money has normally consisted of some form of metal. Although both gold and silver were often standard money metals, the modern practice has steadily moved in the direction of gold alone. But we have noted earlier in the chapter that standard money need not necessarily be metal at all, but sometimes may be pure inconvertible paper currency.

The inauguration of the use of inconvertible paper money in a country is generally accompanied by a promise of the issuer, whether the State or a note-issuing bank, that the paper will be redeemed in standard metal money. This has led some observers to conclude that inconvertible paper money derives its acceptability and its value from the expectation of redemption in standard metal at some future date. According to this view, the value of pure paper money must fluctuate in direct proportion to changes in the possibility of future redemption. This view also

denies that pure paper money, in itself, can have value independent of its theoretical metal worth. This explanation of the value of inconvertible paper money was understandable at a time when the metallic standard was the rule and inconvertible paper the exception, to be eliminated as soon as possible. But today, in the light of modern monetary experiences with pure paper currencies, it is difficult to hold that pure paper money can have no value in and of itself.

One may say, therefore, that inconvertible paper money sometimes may achieve the distinction of being "standard" or the "last word" in a country's monetary system. Its acceptability is derived not only from habit of use developed before conversion privileges were abandoned, but also from legislative fiat or legal tender qualities. Sometimes a sheer lack of any available substitute currency plays its part in compelling people to use inconvertible paper.

Two basic types of inconvertible paper money. Inconvertible paper money may take two forms:¹⁴

1. Governments have frequently been forced to meet their necessary expenditures by the issue of paper promises to pay metal money. The occasion for such issues has most frequently been war, when needed expenditures tend to outstrip tax income. Direct resort to the printing press by hard-pressed governments has not been unknown in American history. The Revolutionary War was the occasion for paper money issues (bills of credit) by both the individual colonies and the Continental Congress. The outbreak of the Civil War was the signal for the issue of inconvertible greenbacks.

2. Both in the past and in modern times, inconvertible paper money, with most if not all of the attributes of standard money, has originated in the form of bank notes. In England, 1797-1821, the currency mainly consisted of inconvertible Bank of England notes, while today in practically all countries of the world (with the possible exception of the U. S.) standard money consists of inconvertible promises of the central banks.

¹⁴ Many excellent accounts of historical experience with inconvertible paper are available. For compact, competent summaries of the work in this field, see J. Laurence Laughlin's *Money, Credit, and Prices*, Vol. II, Chapters III-XI, and Edwin W. Kemmerer's *Money*, Chapters X-XIII. W. C. Mitchell's familiar *History of the Greenbacks*, 1903, is an authoritative work on the experiences with the United States notes.

CHAPTER III

MONETARY STANDARDS

Early Monetary Standards

THE DEVELOPMENT of monetary systems providing standard coins of uniform value was the result of long and trying experience. Early attempts at coinage often resulted in the appearance of a number of separate, independent types of money, each with its own subdivisions. This situation resulted from the assimilation of the coins and coinage practices of neighboring trading states, from irregular minting, and from abrasion and clipping.¹ Gradually it became possible for central governments, by preventing debasement, to bring different coins of the same metal into a fixed relation to each other. But even this improvement left a parallel standard of two independent currencies, one of silver and the other of gold. With price calculations and debts made in either of the two currencies, the situation left much to be desired. A standard, uniform currency was still lacking.

Bimetallism

The next step in the development of currencies was to devise a system in which standard coins of a given value might be minted out of both gold and silver. In this way not only would gold and silver coins circulate side by side, but they would also be interchangeable. Thus, a debt calling for the payment of a given number of dollars could be discharged by the payment of either silver or gold. Both metals were given the right of free and unlimited coinage into standard monetary units. Such a system was called *bimetallism*.

But certain difficulties always tended to arise under bimetallism. Its adoption required a decision as to the appropriate weight which should be given to each type of coin. Since both

¹ A detailed account of the chaotic condition of early currencies can be found in Helfferich, Karl, *Money*, New York, Adelphi Co. (Greenberg), 1927, Vol. I, pp. 34-50.

were to have the same nominal value and each was to be freely coined, it was necessary that the relative size of coins of the two metals bear a close relationship to their relative value as bullion. The mint ratio was the relative quantities of the two metals required at the mint to make a standard monetary unit. Thus, a mint ratio of 16:1 meant that the silver dollar required an amount of silver 16 times the amount of gold in the gold dollar, and was chosen because it was thought to correspond to the relative bullion values of the two metals. But new discoveries of the metals caused marked disturbances in the relative values. When silver discoveries reduced the bullion value of silver, the silver dollar no longer contained as much bullion value as did the gold dollar. On the other hand, when gold discoveries reduced the value of gold as compared to silver, the bullion value of the gold dollar became less than that of the silver dollar. Such a situation invited the action of "Gresham's Law" and led to the displacement of the dearer metal by the cheaper metal in the monetary system of the country. A similar disturbing result occurred when other bimetallic countries had mint ratios which differed from that of the country concerned. These foreign mint ratios affected the domestic "market" ratio.

Gresham's Law. In its simple form, the monetary principle known as "Gresham's Law" is this: "Bad or overvalued money tends to drive out of circulation good or undervalued money." A fuller and somewhat more correct statement is that, given a sufficient supply of bad or overvalued standard money with the characteristic of general acceptability, the good or undervalued standard money may be displaced by the lighter or overvalued money. Bad money or overvalued money is that which contains less bullion value for a stated face value than the good or undervalued money.²

Under bimetallism, Gresham's Law begins to operate whenever the market ratio of silver to gold shifts away from the mint ratio. For example, if the mint ratio and the market ratio were both 16:1, both gold and silver coins would circulate. But if silver production should expand enough to make silver cheaper than before, as compared to gold, so that the market ratio changed to

² Sir Thomas Gresham is said to have used this principle in explaining to Queen Elizabeth why the new fullweight coins did not remain in circulation in the face of old, underweight, clipped coin. For a statement of the origin of the use of Gresham's name in connection with this long-known principle, see Laughlin, J. L., *New Exposition of Money, Credit, and Prices*, University of Chicago Press, 1931, Vol. I, pp. 51-52.

17:1, it would become profitable to convert gold coin into bullion and to exchange it in the market for silver at 17:1. Out of the seventeen parts of silver thus obtained, sixteen parts could be made into silver coins to replace the gold coins melted, and one part silver would be left as a profit on the transaction. So long as the market ratio remained sufficiently different from the mint ratio to make such a profit possible, the process of displacing gold coins with silver would continue. If the shift in relative silver and gold values represented a world-wide change, the gold coins of an individual country acting alone on the bimetallic standard would almost certainly be displaced by silver without causing a corrective change in the market ratio. If increased gold output lowered the relative value of gold as compared to silver so that the market ratio became 15:1, the reverse of what we have just described would occur. Gold, being the cheaper money, would displace the dearer silver coins, which would be melted up and sold as bullion.

Experience has shown that it is difficult for a single country to maintain its mint ratio equal to the market ratio. The latter fluctuates with changes in production and in the nonmonetary demand, while mint ratios, once established, are unlikely to be changed with any frequency. Attempts to establish and maintain bimetallism, therefore, have generally resulted in an alternating standard, with first one and then the other of the two metals making up the currency.

The compensatory action of bimetallism. Admirers of bimetallism contend that its unsatisfactory record is due to a failure to use it on a scale large enough to permit its "compensatory action" to become effective. They hold that the adoption of bimetallism on an international basis with uniform, fixed mint ratios would make it impossible for the market ratio to deviate from the mint ratio long enough to cause either metal to be completely displaced by the other. If, for example, silver became cheaper, silver bullion would then come to the mints in larger amounts; at the same time, gold coin would be melted and newly mined gold would be diverted into bullion use. Thus, it is believed, silver bullion would become more scarce and gold bullion would become more plentiful until the market ratio equalled the mint ratio.

In using this argument, bimetalists are impressed by the importance of the monetary rather than the nonmonetary demand for gold and silver. The compensatory action of bimetallism might be largely nullified because of its tendency to encourage

the production of the cheaper metal. If, for example, cheap silver flows to the mint where it commands a high price, new production will be stimulated. In the face of this, there is little assurance that even international bimetallism could maintain the market ratio at the level of the mint ratio without eventually displacing gold with silver.³

There is some evidence, however, that the market ratio between gold and silver might be maintained near equality by the adoption of bimetallism by a group of important countries. During the first three-quarters of the nineteenth century, France, on the bimetallic standard, held open its mints to the free coinage of gold and silver at the ratio of $15\frac{1}{2}:1$. During this period, in spite of the fact that the ratio of silver production to gold production was about 3:1 during the 1801-1820 period and about .35:1 during the 1851-1870 period, the world market ratio between silver and gold remained remarkably close to $15\frac{1}{2}:1$. If France, maintaining a mint ratio of $15\frac{1}{2}:1$, was able to influence the market ratio to remain at $15\frac{1}{2}:1$, it seems probable that an international system adhering to a uniform mint ratio would be successful in keeping both metals in monetary use.⁴

Arguments for bimetallism. Not until the single gold standard had become firmly entrenched in Europe and in the United States did arguments in favor of bimetallism become important. These arguments stemmed from the difficulties associated with the falling value of silver and the rising value of gold which took place during the last quarter of the nineteenth century. Between 1870 and 1902, the market ratio between gold and silver rose from 15.5:1 to 39.1:1.⁵ Concern over the decline in the value of silver arose in several quarters. In the United States, producers of silver demanded bimetallism because they desired the favorable price which would result from a return to the 16:1 mint ratio with free coinage of silver. At the same time debtors, oppressed by the falling price trend of the period, added their voices to the clamor for bimetallism. They believed that the free coinage of silver would add to the monetary supply and help to raise prices. In England, a considerable sentiment in favor of bimetallism developed in the belief that it would provide a solution for the

³ This point was raised in the *Report of the Royal Commission on Gold and Silver*, 1888, p. 108. For a detailed discussion of the compensatory action of bimetallism, see Kemmerer, E. W., *Money*, New York, The Macmillan Co., 1906, pp. 83-91.

⁴ *Report of the Royal Commission on Gold and Silver*, p. 27.

⁵ *Hemmerl, Money*, Vol. I, pp. 112-113.

awkward problem presented by the falling rate of exchange on silver standard countries, particularly India.

The theoretical claims made for bimetallism were: (1) it would tend to stabilize the value of money, and (2) it would give stable exchange rates with silver-using countries. The first claim rests upon the assumptions (1) that changes in the volume and value of gold and silver would not be in the same direction or at the same time, and (2) that the compensatory action would result from the operation of Gresham's Law. Granting both of these assumptions, a cheapening of gold, for example, due to expanded production would cause gold to enter and silver to leave the monetary system. The loss of silver would partially offset the gain in gold. The supply of money, therefore, would be affected less than it would have been if gold had been the only money and there had been no silver for it to displace. Because modern improvements in production techniques may apply to both gold and silver alike, there is little reason now to hope for any important stabilizing results from compensatory action. The argument that bimetallism would provide stable foreign exchange rates on silver standard countries no longer has any force, since the use of the silver standard has been almost completely abandoned.

Bimetallism in England. Like most other countries, England at one time tried bimetallism but found it difficult to keep the bullion value of gold and silver coins equal to their face value. In 1663, it introduced the parallel standard by issuing a new gold coin called the "guinea," which circulated independently of the silver coins. This system was objectionable in that it required two pricing systems. The silver currency was reformed in 1717 to fix the value of the gold guinea at twenty-one shillings in silver. Technically, therefore, this put in operation the bimetallic standard, but the value of twenty-one shillings placed on the gold guinea was too high in the light of bullion prices and the relative bullion content of the guinea and the shilling. Because the bullion in twenty-one new silver shillings was worth more than the gold in the guinea, silver was undervalued or good money, and new silver shillings were melted. This left in circulation only the gold guinea and the thin, old, underweight silver pieces not worth melting. But in the 1790's, silver value fell to the point where it was profitable to bring silver to the mint. In the face of a threatened displacement of gold by the new flood of silver coins, the English mints were closed to the coinage of silver in 1798 and the single gold standard became a reality. It was not

until 1816 that Parliament established the gold standard by statute.⁶

Bimetallism in Europe. Among the European countries, Italy, Belgium, France, and Switzerland maintained a system of bimetallism during the first 75 years of the nineteenth century. Because the cheapening of gold in the 1850's made it difficult to keep silver coin in circulation, a kind of competitive devaluation of silver currency appeared. Switzerland first lowered the bullion content of its silver coins. The new lightweight Swiss francs began to invade France, and the heavier French francs were exported, melted, and recoinced at a profit in Switzerland. To give mutual protection to their currencies, these four countries formed the Latin Monetary Union in 1865. This provided for adherence to bimetallism at a ratio of $15\frac{1}{2}:1$ and for the free coinage of gold and silver five-franc pieces. It further provided for the limited coinage on government account of smaller silver pieces which had a reduced silver content in order to avoid their being melted when the price of silver bullion rose.

When the price of silver bullion began to fall after 1872, the result was a flood of silver into the countries which comprised the Latin Monetary Union. Germany abandoned its old silver standard in favor of the single gold standard in 1873 and was followed shortly by the Scandinavian countries. To shield themselves from the influx of silver, the countries of the Latin Monetary Union limited the coinage of silver five-franc pieces under a series of agreements beginning in 1874. It was 1878, however, before they agreed upon a complete suspension of the free coinage of silver.⁷

Bimetallism in the United States. Bimetallism was established in the United States in 1792 with a mint ratio of 15:1. Very shortly after, the market ratio shifted to about $15\frac{1}{2}:1$, and by 1812 silver coins had displaced the gold. The silver currency, however, was in a disorganized and unsatisfactory condition. The silver dollars provided for under the coinage laws were somewhat lighter than the Spanish silver dollars which were then in common use; and, although the law stated that the two were to be equal in value, actually the Spanish dollars commanded a premium. The bright, shiny, newly minted American dollars, in spite of their light weight, found ready acceptance in the West

⁶ Helfferich, *Money*, Vol. I, pp. 54-59. See also Hawtrey, R. G., *Currency and Credit*, New York, Longmans, Green & Co., 1928, Chapter XVI.

⁷ Laughlin, J. L., *History of Bimetallism in the United States*, 1888, pp. 146-160.

Indies, however, and a profitable business of exchanging new American dollars for the tarnished but heavier Spanish dollars developed there. The Spanish dollars were brought to the United States, melted, and recoined at the mint into lighter American dollars. The United States mint was thus actively engaged in minting silver dollars, but the supply of coins in the United States did not show a corresponding increase. To stop the needless expense, the coinage of silver dollars was suspended in 1805 and no more were coined until 1836. The coinage of silver half-dollars was continued, however, with substantially the same results as those which attended the coinage of the silver dollars.⁸

In 1834, the coinage laws were changed to make the gold eagle (ten-dollar piece) contain 232 grains of fine gold instead of 247.5 grains, while the silver dollar was left unchanged with 371.25 grains of fine silver. This made the mint ratio 16:1. The market ratio in the meantime stood at 15.7:1. The result was the gradual replacement of silver by gold coins.⁹ In 1837, further changes in the coinage laws provided that both silver and gold coin be minted from bullion nine-tenths fine. Two-tenths of a grain of fine gold was added to the gold eagle. The gold dollar then contained 25.8 grains of nine-tenths fine gold while the silver dollar contained 412.5 grains of nine-tenths fine silver.¹⁰

The discovery of gold in California, Australia, and Russia pushed the output of gold to unprecedented heights, and gold became cheaper in relation to silver. By 1853, the market ratio had become 15.4:1 and the pressure to melt silver coins increased. Although badly needed for small change, small silver coins could not be kept in circulation. To remedy this, subsidiary silver coins were reduced in weight by 6.91 per cent. The total weight of one dollar's worth of half-dollars or quarters was thus reduced from 412.5 to 384 grains. This placed the subsidiary silver coins definitely in the position of token money, with a face value above their bullion value. At the same time, the right of free coinage

⁸ *Ibid.*, pp. 52-54. At President Jefferson's direction, James Madison, then Secretary of State, wrote a letter to the Director of the Mint ordering the cessation of the coinage of silver dollars. Although the letter was dated May 1, 1806, other evidence indicates that coinage of the silver dollar was actually suspended in 1805. Cf. Watson, David K., *History of American Coinage*, 1899, pp. 74-75.

⁹ Laughlin, J. L., *History of Bimetallism in the United States*, p. 70.

¹⁰ *Ibid.*, pp. 73-74. Previous to this, silver coins had been eight-ninths fine while gold coins were eleven-twelfths fine.

of subsidiary silver was withdrawn and the legal tender power of such silver was limited to \$5.¹¹

Both the debased subsidiary silver and gold disappeared from circulation during the greenback depreciation of the Civil War. It was 1877 before the paper currency had risen in value to the point where it was no longer profitable to melt the debased subsidiary silver, and silver change again appeared in circulation.¹² Redemption of greenbacks in gold began in 1879.

The coinage laws of the United States were again revised in 1873. It will be recalled that silver dollars had been unprofitable to mint since 1834. Since no one wished to convert silver bullion into silver dollars in 1873, the revised coinage laws omitted the silver dollar from the list of coins which could be minted. As a result, silver was deprived of the privilege of free coinage, and the United States currency was placed on a monometallic basis. No sooner had this been done, however, than there occurred many silver discoveries in the West, leading to an enormous expansion in silver production. The price of silver bullion became cheaper, so that the market ratio between silver and gold reached 16:1 in 1874 and 17.75:1 in 1876. At 16:1 it was profitable to offer silver bullion for coinage into dollars containing 412.5 grains of silver .900 fine, and as silver continued to fall, the advantage of free coinage became more pronounced. This led to heavy pressure from the silver-mining interests for the reopening of the United States mints to the free coinage of silver. They were joined in this by the agricultural debtor group, which hoped for relief from the pressure of falling prices by an expansion in supply of silver currency.

Two compromise measures resulted from the agitation for free silver. The first was the Bland-Allison Act of 1878, which required the purchase and coinage of not less than \$2,000,000 nor more than \$4,000,000 worth of silver per month. Under this law the Government bought 291,272,018 fine ounces of silver equal to \$375,640,903 in silver coin. The second was the Sherman Silver Purchase Act of 1890, which increased the mandatory purchase of silver to 4,500,000 fine ounces per month. Under this law 168,674,682 fine ounces were bought. The law was repealed late in 1893, during the financial panic which was believed to have been caused, in part, by the fear that the Treasury could not maintain gold payments but instead would have to take to

¹¹ *Ibid.*, pp. 79-85. On June 9, 1879, subsidiary silver was made legal tender up to \$10.

¹² *Ibid.*, pp. 90-91.

redeeming currency in silver. In 1900 the United States was definitely committed to the gold standard by the Gold Standard Act of that year.

As a result of the two silver purchase acts, \$576,166,000 in silver currency was added to the monetary supply. The absorption of this new currency was made easier by (1) the issue of the more acceptable silver certificates in the place of silver dollars and (2) the prohibition of the issue of greenbacks and national bank notes in denominations of less than \$5. Although legal tender, save when special contracts were made to the contrary, these silver dollars and certificates were in fact mere token money with a face value considerably above their bullion value. An indirect form of redemption was achieved through the action of the Treasury, which accepted silver dollars and silver certificates in payment of customs duties, taxes, and all public dues while paying out gold on demand. This assured the parity of silver currency with gold.¹⁸

The Gold Standard

In contrast to bimetallism, which involves the free coinage of two standard money metals—silver and gold—the gold standard provides only for the use of gold as the basic money metal. Thus, under the gold standard, the standard monetary unit is a given fixed quantity of gold. Paper money and bank credit substitutes for the standard money are maintained at par by being convertible into gold. Free coinage of gold, in its broader sense, is a necessary characteristic of the gold standard. This means that gold bullion can readily be converted into standard money and, conversely, that standard money can be converted into gold bullion.

The gold coin standard. Several modifications of the gold standard have been introduced into the postwar practices of the gold-using countries of the world. These modifications may best be visualized by beginning with a description of the old-fashioned type of gold standard, which, for purposes of contrast, may be called the *gold coin standard*.

Under the gold coin standard, gold coins of a certain weight and fineness are the standard monetary units. Thus, the gold dollar containing 25.8 grains of nine-tenths fine gold was the standard monetary unit of the United States prior to January 31,

¹⁸ For a careful account of the operation and the effects of the silver purchase acts, see Laughlin's *Money, Credit, and Prices*, Vol. I, pp. 244-256.

1934. Standard gold bullion (.900 fine) could be brought to the mint in unlimited quantities and be converted without charge into coin. At the same time, the mint would receive gold coin in lots of \$5,000 or more and give out gold bars in exchange.¹⁴ The British sovereign or pound sterling contained 123.27447 grains of gold eleven-twelfths fine.¹⁵ Before the First World War, the French franc contained 4.97806 grains of gold nine-tenths fine. Under the gold coin standard, therefore, other forms of currency were convertible into standard gold coins which anyone was privileged to hold, hoard, spend, or melt, as he saw fit.

The right of free coinage entitled any holder of gold bullion to have it coined into standard coins without any quantitative limit. This process involved some cost, since a little time normally elapsed between the bringing of the metal to the mint and the receipt of standard coins. Moreover, the mint frequently added a special charge to cover the expense of minting. In some instances, charges were in excess of the actual minting costs, with a resulting profit to the mint called "seigniorage." In such a case, the face value of the coin exceeded its bullion value.

The gold coin standard, therefore, provided for the unlimited conversion of bullion into standard gold coin, the conversion of gold coin into bullion, and the right of private citizens to hoard or use either gold coin or bullion without restrictions save those against mutilation.

The gold bullion standard. A change in form of the gold standard appeared with the English postwar gold bullion standard. From May, 1925, when England re-established the gold standard, until it was forced off again in September, 1931, the Bank of England redeemed its notes, not in gold coin, but in gold bullion in amounts of not less than 400 ounces. Instead of free coinage, there existed the right to convert gold bullion into Bank

¹⁴ The gold dollar itself was not coined after 1890, except in limited amounts for commemorative purposes. Because of its small size, the gold dollar was inconvenient and was superseded by the silver dollar and silver certificate. The most common gold coin was the double-eagle or \$20 piece. In addition, there were the eagle or \$10 piece, the half-eagle or \$5 piece, and the quarter-eagle or \$2.50 piece. The coinage of the \$2.50 piece was discontinued in 1930. *Annual Report of the Director of the Mint*, 1932, p. 87.

¹⁵ The Bank of England sold gold (eleven-twelfths fine) at the statutory price of £3 17s. 10½d. per ounce. The English mint would coin, without charge, one ounce troy of gold bullion into £3 17s. 10½d. For the convenience of holders, the Bank of England bought gold bullion at £3 17s. 9d. per ounce (under the act of 1844). The difference of 1½d. between this and the price at the mint represented an interest charge for the advance by the Bank. Cf. Laughlin, *Money, Credit, and Prices*, Vol. I, p. 80.

of England notes. No restriction was placed upon the right of private citizens to hold or use gold bullion. It might be hoarded, used in the arts, or exported. The only essential difference between the gold bullion standard and the gold coin standard is that the former provides no gold coin for hand-to-hand circulation. Since a substantial volume of gold was in circulation before 1914, the gold bullion standard resulted in some economy in the monetary use of gold. The bank notes which replaced coin in circulation were not backed by a full 100 per cent gold reserve. France, like England, adopted the gold bullion standard when it resumed gold payments in 1928. The bullion feature was optional with the Bank of France, which could convert its notes into either bullion or coin as it chose.

The limited gold bullion standard. The United States has been operating under a somewhat different type of gold bullion standard since the passage of the Gold Reserve Act of 1934. All gold coins were withdrawn from circulation and melted into bars, and the coinage of gold for domestic uses is no longer permitted. Instead, the Treasury will purchase gold bars at a fixed price of \$35 per fine ounce minus a handling charge of $\frac{1}{4}$ of one per cent and a small charge for assaying and testing. In return, the seller gets Treasury drafts payable in some form of bank credit. In this way gold bullion can be converted into deposit currency. Special licensees may buy gold for industrial uses at \$35 per fine ounce plus $\frac{1}{4}$ of 1 per cent for handling charges. Currency may therefore be converted into gold for industrial purposes, but the ordinary citizen is denied the privilege of obtaining and keeping bullion. This deviation from the British form of gold bullion standard arose out of the gold-hoarding regulations of 1933, when it was feared that hoarding of gold, even in bullion form, might prove embarrassing to our monetary system. Under the present arrangements, neither the ordinary citizen nor bankers may obtain gold for export. Instead, the task of maintaining the value of the dollar in terms of other currencies by the export of gold has been taken over by the Treasury.¹⁶

¹⁶ On April 5, 1933, the President issued an Executive Order forbidding the hoarding of gold coin or bullion or gold certificates. This order was followed on December 28, 1933, by an order of the Secretary of the Treasury under the authority of the Emergency Banking Act of March 9, 1933, requiring the transfer to the Treasury of all gold coin, bullion, or gold certificates, with a few unimportant exceptions. The Gold Reserve Act of 1934 empowered the Secretary of the Treasury to set the conditions under which gold may be acquired, held, transported, melted or treated, imported, exported, or earmarked.

Between February 1, 1934, and October, 1936, the Treasury sold gold to bankers

This last type of limited gold bullion standard resembles but slightly the original gold coin standard. Nevertheless, it retains two essential features of any gold standard: (1) the free conversion of bullion into currency and bank credit and (2) the free conversion of currency and bank credit into bullion for industrial uses and for export. The uncertain manner in which such a standard was operated under the regulations of the United States Treasury does not invalidate the assertion that such a standard meets the basic requirements for the use of gold as a monetary base.

The place of silver in gold standard countries. In spite of the almost universal adoption of gold in the modern world, silver retained an important role in most monetary systems. Its use under bimetallism was carried over to the gold standard systems, where it was commonly used as token money for hand-to-hand circulation. In the United States, the subsidiary silver coins and the silver dollars (and silver certificates) constitute an important part of the money in circulation.

Advantages of the gold standard. The gold standard is said to have two main advantages over inconvertible paper currency. First, gold is more stable in value; second, as an international standard, it provides stable foreign exchange rates.

The claim that gold money is more stable in value than paper rests primarily upon the natural limits to the available supply. Moreover, its durability is such that a very large part of gold mined in past years remains in existence, so that annual changes in output have but little short-run effect upon the aggregate supply. Therefore, not only is gold scarce, but also its supply remains relatively stable. This in turn is reflected in a relatively stable value. In contrast, inconvertible paper money is exposed to overissue at the whim of the government. It is well known

for export to foreign central banks whenever the foreign exchange rates rose to the gold export point. On October 13, 1936, the Treasury announced that it would sell gold for export to foreign countries or would earmark gold for the account of the stabilization funds of these countries if they, in turn, would sell gold to the United States. On November 24 of the same year, it announced its willingness to sell gold to treasuries or to any fiscal agent of treasuries offering to sell gold to the United States in return. Such sales were to be made through the Federal Reserve Bank of New York. Under these regulations the Treasury agreed to export gold to Great Britain, France, Belgium, the Netherlands, and Switzerland. It was clearly stated, however, that the agreement to export gold might be revoked upon 24 hours' notice. The sale price of gold, corresponding to the gold content of the dollar as fixed by the President's proclamation on January 31, 1934, was \$35 per fine ounce plus handling charges of $\frac{1}{4}$ of one per cent.

that the path to a balanced budget is sometimes thorny and easily abandoned in favor of the smoother path of paper money expansion. The gold standard, rigorously adhered to, closes the door to paper money inflation. Like the redemption of commercial bank liabilities in standard money, the redemption of a nation's currency in gold compels a quantitative restraint which will keep the issue "in step" with the outside world; for any excessive volume of currency will induce an unfavorable balance of indebtedness, a loss of gold, and a retreat to a more tenable position. The argument that gold is more stable than paper is weakened by the fact that, however great its virtues, the gold standard seldom is allowed to impose much restraint upon governmental fiscal practices when the going becomes rough. At the same time, the behavior of inconvertible paper during periods of wartime inflation is no proof that it would not prove even more stable than gold once it were tried under normal conditions.

The second advantage claimed for the gold standard is derived from the fact that between countries it provides exchange rates which are determined by the relative gold contents of their respective currencies. Before the devaluation of the dollar in 1934, the mint par exchange rate between the dollar and the British pound was \$4.8666 per £1. This means merely that \$4.8666 contained as much gold as did one pound sterling. When pounds could be converted into exportable gold, pound drafts or bills of exchange drawn upon London banks or on other creditors need never be sold in New York for less than \$4.8666 per pound, minus the cost of converting them into gold and shipping the gold back to New York. On the other hand, \$4.8666 could be converted into gold, and the gold shipped to London and sold for a pound. Therefore, Americans wishing to remit funds to London need never pay more for pound drafts than \$4.8666 plus the cost of shipping gold to London. Under the international gold standard, foreign exchange rates cannot deviate from mint par by more than the cost of exporting or importing gold. These maximum and minimum prices of foreign bills of exchange are known as the *gold points*. This relative fixity of foreign exchange rates under the gold standard is of no small importance. It protects traders from the hazard of wide fluctuations in the exchanges during the period between the time of the sale and the receipt of the proceeds. In addition, it encourages long-term foreign investment; and such investments played an important part in the economic development of the nineteenth century.

The successful operation of the international gold standard re-

quires that each country's balance of payments be maintained in substantial equilibrium. This calls for the adjustment of the price levels of the several countries to the point where imports and exports (visible and invisible) are in approximate balance. In such a case, settlements between countries require only small gold shipments. So long as these gold movements are small and temporary in nature, no serious impairment in the gold reserves of any country's banking system will occur and the gold standard will work admirably. But there are times when a country's balance of payments becomes so violently disturbed that a sustained and intolerable drain of gold is experienced and the gold standard is abandoned. To operate successfully, therefore, the gold standard must be free from too violent and sudden changes in the transactions which make up the debit or credit side of the balance of payments. Moreover, it is important that a re-establishment of equilibrium in the balance of payments be easily and quickly achieved whenever disequilibrium appears. In order that this may be so, the price levels of the several countries must be flexible and readily responsive to a gain or loss of gold. Any development which increases the inflexibility of prices will therefore make the successful functioning of the gold standard more difficult. A more complete examination of the manner in which the gold standard operates and the weaknesses which it exhibits will be made in Chapters XXXVII, XXXVIII, and XLVII.

The Gold Exchange Standard

The principle of the gold exchange standard is a simple one. In its more formal types, it was designed to permit silver standard countries to enjoy the advantage of having their currencies so tied to the international gold standard as to provide fixed rates of exchange while retaining the traditional or customary silver currency for domestic use. Without some device for maintaining fixed exchange rates on gold standard countries, silver-using countries were in the awkward position of seeing the value of their currencies in terms of gold currencies fluctuate with the changes in the gold value of silver bullion on the world's bullion markets. This fluctuation was unimportant so long as international bimetalism, even on a limited scale, helped to maintain a fairly stable ratio between the market value of the two metals. It became more acute during the last quarter of the nineteenth century, when silver began to drop sharply in value. A shift to a complete gold standard by such countries would have been both unduly expensive and in conflict with the monetary habits

of the people. The gold exchange standard was the answer to the problem.

The Philippine gold exchange standard. The prewar gold exchange standard may best be understood by examining the system organized in the Philippine Islands in 1903.¹⁷ Although it was not the first example of the use of the gold exchange standard, the Philippine system affords an especially good opportunity to observe such a standard under well-defined, permanent rules, since it was intentionally planned and set up in the light of *de facto* systems working elsewhere.

The gold peso, worth fifty cents in United States currency, was made the standard unit of value by the Philippine Coinage Act of March 2, 1903. This standard gold peso was not coined, however. Instead, silver pesos weighing 416 grains of nine-tenths fine silver were coined for use as the standard medium of exchange for the Islands.¹⁸ At the time of the passage of the Act, the bullion value of the silver peso was \$.377, an amount believed to be sufficiently below the redemption value of \$.50 to insure against its being melted. A subsequent rise in the value of silver, however, threatened to make melting of the silver peso profitable, and the weight was reduced.¹⁹ For greater convenience, the Philippine Treasury issued treasury certificates redeemable in silver pesos and backed by a treasury fund, part of which was carried as deposits in American banks. These treasury certificates make up about four fifths of the currency in circulation.

To maintain the parity of the silver peso with the theoretical gold peso (\$.50), the Philippine Government established the Gold Standard Fund under the control of the Philippine Treasury. This fund was divided into two parts. One part was held in Manila while the other was placed with a depository in New York. The Insular Treasurer was required to sell drafts on the gold standard fund in New York at the rate of two pesos to one dollar, making a charge of $\frac{3}{4}$ of one per cent for demand drafts and $1\frac{1}{8}$ per cent for telegraphic transfers. Later these charges were somewhat reduced. The New York depository was re-

¹⁷ For a complete account of the Philippine gold exchange standard, see E. W. Kemmerer's authoritative work, *Modern Currency Reforms*, New York, The Macmillan Co., 1916, Chapters V-IX.

¹⁸ The silver peso was slightly larger than the United States silver dollar, which contains 412.5 grains of nine-tenths fine silver.

¹⁹ Kemmerer, *op. cit.*, p. 315. In 1905, the price of silver rose to the point where melting of the peso became profitable. As a temporary measure, the Philippine Government prohibited the melting and export of silver coins. In 1906, the coinage law was changed, and the silver pesos were recoined into new standard pesos containing 308.66 grains of silver eight-tenths fine. *Ibid.*, pp. 354 and 359.

quired to sell drafts on the Philippine Treasury fund at the same rates. In 1935, the theoretical gold peso was abolished and the silver peso became redeemable in 50 cents American currency.

Whenever the Insular Treasury received Philippine currency in exchange for the sale of drafts on the New York fund, such currency was retained in the Treasury to be put into circulation again only when exporters sold foreign bills of exchange to the Treasury. An expansion in the value of Philippine exports resulted, therefore, in an increase in the volume of local currency in circulation. An expansion of imports, on the other hand, tended to reduce the volume of local currency in circulation. A shrinkage in the Manila fund, due to an excess of exports from the Philippines, resulted in a corresponding expansion in the New York fund. An excess of imports caused the Manila fund to expand and the New York fund to shrink. When exports and imports were in balance, indicating that the price structure of the Philippines (rated in gold) was in equilibrium with the rest of the world, the Manila and New York funds remained undisturbed. When exports became excessive, more pesos flowed out into the Philippine monetary system, tending to raise the level of internal prices and restore equilibrium. In case the Manila fund became exhausted, more silver could be bought out of the increased New York fund and coined into pesos. An excess of imports caused a decrease in the volume of currency, which in turn tended to reduce the Philippine price structure and restore equilibrium.

So long as the Philippine price structure was flexible enough to permit the necessary readjustments to occur before the New York fund was exhausted, the gold exchange standard worked automatically. But the automatic nature of the Philippine gold exchange standard was lessened somewhat by the practice, begun in 1911, of depositing part of the Manila fund in Manila banks and investing part of it in Philippine enterprises. To be sure, in so far as such deposited or invested funds consisted of the gradual accumulations from past profits of the fund, no objection could be raised to such use, provided the fund itself remained adequate in size to meet the needs. But it was objectionable for the Treasury to make such a use of pesos accumulated in Manila from an excess of imports, because such action prevented the reduction in volume of domestic currency required to correct the price level and re-establish equilibrium.²⁰ The only occasion on

²⁰ For the details of this use of funds by the Philippine Treasury, see Kemmerer, *op. cit.*, pp. 365-382. J. L. Laughlin, a severe critic of the quantity theory of money, criticized the view that control of the quantity of the domestic

which the gold exchange standard threatened to break down was between 1919 and 1921, when the Philippine Treasury was unable to maintain its gold balance in New York. As a result, New York exchange rose to a premium of 16 per cent. This difficulty was due to the failure of the treasury to withhold from circulation the pesos which it received from those purchasing New York exchange.²¹

The reduction in the gold content of the dollar in 1934 left the Philippine peso in a difficult position. A depressing effect upon the Philippine economy would have resulted if the old gold peso had been retained and the value of pesos in terms of dollars raised to correspond to the dollar's devaluation. The gold peso was, therefore, legally abandoned, and the peso became redeemable only in \$.50 worth of New York exchange. It thus formally became a dollar exchange rather than a gold exchange standard.²²

The Philippine gold exchange standard was patterned after that in use in India, although with important modifications. The Indian system well illustrates the gradual evolution of the now well-understood process of maintaining a domestic token currency in some fixed relation to a foreign currency.

The Indian gold exchange standard. Before 1893, India used a monometallic silver standard. The rapid fall in the value of silver in terms of gold caused the value of the silver rupee to decline in terms of the gold pound, to the embarrassment of both traders and the Indian Government. Because imported silver had but a small and belated effect on the Indian price level, Indian exports were stimulated, imports were hampered, and the situation of English merchants exporting to India was made difficult. Moreover, the steady appreciation of the pound in terms of rupees handicapped the Indian Government in meeting its foreign debts.²³ To avoid the difficulties of the independent sil-

currency is necessary for the proper operation of the Philippine system. He held that the gold value of the peso is maintained by its redemption in gold rather than by withdrawing pesos from and injecting pesos into circulation. Cf. his *Money, Credit, and Price*, Vol. I, p. 416.

²¹ *Hearings Before the Committee on Banking and Currency*, United States Senate, S3486, "Philippine Currency Reserves," February 27 and March 5, 1936, Memorandum of Major General Frank McIntyre, Philippine Trade Commissioner, March 4, 1936.

²² This was accomplished by legal enactment, March 16, 1935.

²³ This whole problem was studied by a Royal Commission appointed for the purpose in 1886. Its report was made in 1888 and contains an elaborate factual and theoretical analysis of the decline in the value of silver. See *The Monetary Problem of Gold and Silver*, New York, Columbia University Press, edited by Ralph Robey and republished in 1936. Especially see pages 67-100 of this report. Also see Keynes, J. M., *Indian Currency and Finance*, London, Macmillan

ver standard, the Indian mints were closed to the free coinage of silver in 1893.²⁴

Unlike the Philippine gold exchange system, the Indian system was the result of trial and error over a long period. Although the gold sovereign was made legal tender in 1899, attempts to introduce it into circulation failed. Instead the Indian currency was made up of small coins, silver rupees, and government issued currency notes. The latter are now replaced by the notes of the Reserve Bank, which was organized in 1935. After 1898, the government at Calcutta sold sterling drafts in exchange for rupees at not less than $15\frac{2}{3}$ d. per rupee. Likewise, it sold rupee drafts in London at not over $16\frac{1}{8}$ d. per rupee. These prices were within the gold points and permitted settlements between India and the outside world without gold shipments. Thus, although there was no law authorizing it, a *de facto* gold exchange standard was created by administrative order. But, owing to the absence of any well-defined rules, no automatic contraction and expansion of Indian currency was provided to meet the needs of trade and debt balances.

During the First World War, 1914-1918, the greatly increased demand for Indian exports forced up the price of rupee drafts, and with them the price of silver required to coin additional rupees. The silver in the rupee rose in value to over 22d. The exchange value of the rupee was likewise permitted to rise with the rising value of silver, and the rupee became again a free silver standard. After the depression of 1920 hit the world, Indian prices remained high and the rupee fell sharply in value to 15d. sterling and 12d. in gold. Since 1924, the exchange value of the rupee has been maintained at 18d.; and when England abandoned the gold standard in 1931, the rupee became a sterling exchange standard.²⁵

Other examples of the prewar gold exchange standard. The Indian and Philippine currencies furnish the most important ex-

and Co., Ltd., 1924. For the view that the difficulty was caused by the rise in the value of gold rather than by a decline in the value of silver, see Barbour, Sir David, *The Standard of Value*, London, Macmillan and Co., Ltd., 1912, Chapter XIII.

²⁴ *Report of the Royal Commission on Indian Currency and Finance*, 1926, Vol. I, p. 1. It was intended at that time that gold should ultimately be adopted as the standard. This, however, was postponed and was never actually accomplished.

²⁵ Cf. *Money and Banking, 1936-1937*, League of Nations, Vol. II, "Commercial Banks," p. 91. Also, for a discussion of the creation of the Reserve Bank, which now controls the exchange value of the rupee, see Shirras, G. Findlay, "The Reserve Bank of India," *Economic Journal*, June, 1934.

amples of the gold exchange standard, but other countries have made use of it also. For a limited time after 1904, Mexico used the gold exchange standard. It was adopted in Siam, in Indo-China, and in the British Straits Settlements. Both Russia and Austria-Hungary made use of the gold exchange standard at times to maintain the external value of their currencies.²⁶ Nicaragua maintained a gold exchange standard after 1913-1914, with balances carried in New York City.²⁷

Postwar gold exchange standards. Two serious problems confronted the countries which wished to return to the gold standard during the 1920's. First, there was the question of what gold parity should be undertaken. Second, there was the problem of accumulating a sufficient supply of gold to enable them to fulfill their promises of redemption of their currencies at the gold parity agreed upon. The first question was directly related to the whole problem of equilibrium exchange rates, which will be examined in a later chapter. A partial answer to the second question was sought by some countries in the adoption of a form of the gold exchange standard.

The gold exchange standard has several advantages. Because it involves the use of some form of token money for circulation, gold need not be accumulated for that purpose. In this respect the gold exchange standard resembles the gold bullion standard. The resumption of gold sometimes required the borrowing of substantial sums in the more powerful money centers of the world. To withdraw these borrowed funds so that they might be held as gold reserves of the borrowing country's banking system would deplete somewhat the gold reserves of the lending countries. But if the proceeds of these loans were left on deposit in the banking system of the lender, the loan could be obtained on more favorable terms. Finally, reserve funds held abroad frequently earned interest, whether in the form of deposits in banks or in the form of investments in bankers' acceptances and other liquid securities. An important feature of the postwar gold exchange standards was the right of the central banks, in most instances, to redeem their notes in *either* gold or foreign exchange.²⁸

²⁶ Keynes, J. M., *Indian Currency and Finance*, pp. 24-35; Kemmerer, *Modern Currency Reforms*, pp. 450-459; 524-539.

²⁷ Young, John Parke, *Central American Currency and Finance*, Princeton University Press, 1925, Chapters XIV and XV.

²⁸ In cases where central banks were given the option of redeeming notes in gold or foreign exchange, the system was not a pure gold exchange standard. The central banks of Danzig and Estonia were required to redeem their notes exclusively in foreign exchange. Mlynarski, F., *The Functioning of the Gold Standard*, 1931 (League of Nations), pp. 8-9.

In satisfying legal reserve requirements, they were allowed to count funds held in gold standard countries.

The practice of counting foreign funds as reserves against central bank liabilities was not unknown even before the First World War. For example, the central banks of Belgium, Bulgaria, Finland, Russia, and Italy were allowed to count in unlimited amounts foreign bank notes, balances deposited in foreign banks, and foreign acceptances as part of their required metallic reserves. In Greece, Portugal, and Sweden, balances deposited in foreign banks were counted as reserves. Limited use of deposits in foreign banks could be made in Austria-Hungary and Rumania in satisfaction of reserve requirements. Denmark, Norway, and Spain permitted limited use of foreign balances, bank notes, and acceptances as central bank reserves. Yet, in spite of these privileges, these central banks were in general required to redeem their notes in gold coin.²⁹

The growth in importance of the foreign exchange holdings of central banks may be seen in the fact that they were but \$350,000,000 in 1913 and had reached \$2,133,000,000 in 1925. If gold held abroad by central banks be included, the total foreign-held central bank reserves amounted to \$2,703,000,000. This was 41 per cent of the total central bank reserves in the 32 countries for which foreign-held reserves were reported.³⁰

The postwar development of the gold exchange standard was expected to aid materially in economizing gold. To be sure, earmarking of gold abroad provided no double use of gold and therefore no economy. But to count as central bank reserves funds deposited in foreign banks or invested in foreign money markets does afford some gold economy. In this connection, three possibilities are presented. First, reserve funds may be deposited in foreign central banks. In this case, the amount of gold tied up in the depositary bank depends upon the legal or customary reserve ratios maintained by it against its deposits. Theoretically, a dollar deposited in the Federal Reserve Bank of New York would require 25 cents in cash reserve, but in fact the reserve bank normally carries reserves against deposits which are nearer 70 per cent than the 25 per cent required by law. In any event, less gold is tied up as reserve against the deposits of foreign central banks than would have been lost if the gold had been taken abroad and held in the vaults of the foreign bank. Second, foreign banks' reserves may be deposited in big commercial banks.

²⁹ *Ibid.*, pp. 5-6.

³⁰ Mlynarski, *op. cit.*, p. 8; League of Nations, *Memorandum on Currency and Central Banks, 1913-1926*, Vol. I, p. 65.

Clearly, the economy in gold is considerably greater when such funds are deposited in a New York City commercial bank than when they are deposited in the Federal Reserve Bank of New York. For gold reserves behind member bank deposits are correspondingly smaller than those behind the deposits in the reserve banks. Thus, if minimum reserve requirements only are observed, the lawful money reserve in the reserve banks is less than 10 per cent of the deposits of member banks in New York City. Third, if reserve funds of foreign central banks are invested in acceptances and other short-term securities found in the money markets of the depositary country, no gold reserves whatever are involved.

Objections to the gold exchange standard. One serious objection to the double use made of gold reserves under the gold exchange standard is the added obstruction which it places in the already rocky path of the automatic operation of the international gold standard. It will be recalled that one requirement for the success of the gold standard is the prompt readjustment of price structures to restore equilibrium in the balance of payments whenever it is disturbed. The gold exchange standard reduces considerably the forces which tend to bring about a necessary correction. Suppose, for example, that the country holding the deposited reserves of gold exchange standard countries should develop an adverse debt balance in favor of the latter countries. Gold will not be withdrawn from the depositary country, but instead the amount of the adverse balance will be shifted from the deposits of private individuals to the reserve balances of the creditor countries. Little if any restrictive effect will be felt in the debtor country. The creditor countries, having larger reserves, will tend to expand credit and prices. The correction in the balance of payments, therefore, must be slowed up because all of the compensating changes have to be made in the credit and price structure of the creditor countries alone. This, of course, is hardly a valid criticism of the gold exchange standard when used by a few small countries. Even under the full gold standard, small countries must make most of the price adjustments required to maintain equilibrium in the balance of payments. But it is important when the gold exchange standard is adopted by a number of large countries.

A second serious objection to any widespread use of the gold exchange standard is the encouragement which it gives to the accumulation of foreign-owned short-term funds and deposits in the financial centers which act as depositaries. The existence

of these funds exposes the monetary and banking systems of the depositary countries to the hazard of entirely unpredictable gold drains. Any loss of confidence in the safety of foreign-held reserves will precipitate their withdrawal. The experiences of 1931-1932, when different money markets of the world were in turn subject to extremely heavy pressure of this sort, give abundant proof of the damaging nature of such withdrawals. It was just such a movement that forced England to abandon the gold standard in September, 1931, and it was only by virtue of its very large gold reserves that the United States was able to withstand similar pressure in 1932. Of course, it must not be taken for granted that the whole blame for the existence of highly dangerous short-term balances rests upon the gold exchange standard. Speculation in foreign exchange and the search for security from currency depreciation caused the appearance of a large volume of such funds.

A third objection to the gold exchange standard is the danger that a suspension of gold payments by the country in which reserve balances are deposited might cause serious losses to the foreign central banks owning such deposits. This risk is well illustrated by the sharp losses suffered by the Bank of France on its London balances when England suspended gold payments in 1931. Experiences since 1929 will increase the reluctance of central banks to carry reserves in the form of deposits in foreign banks.²¹

Central banks and the gold exchange standard. The postwar gold exchange standard differed from the Philippine type in one important detail. The Philippine system was designed to operate automatically; the postwar types were merely adjuncts of the central banks and were under their control and management. A favorable balance of payments, while adding to the reserves of the central bank, did not necessarily increase the size of the commercial banks' reserves if the central bank saw fit to reduce its loans at the same time. Similarly, an adverse balance of payments and a loss of reserves by the central bank was not necessarily reflected in a loss of commercial bank reserves. In this respect, there is no difference between practices under the gold exchange standard and those under the gold standard itself. Needless to say, under either system, intelligent central bank policy is needed.

²¹ For a discussion of the good and bad features of the gold exchange standard, see the League of Nations, *Selected Documents Submitted to the Gold Delegation*, 1930, "Reform of the Gold Exchange Standard," by Dr. Feliks Mlynarski.

Paper money exchange standards. When England abandoned the gold standard in 1931, a number of other countries having close commercial ties with her took similar action. Because of their trade relations with England, they soon found it advantageous to maintain a fairly fixed exchange ratio between their

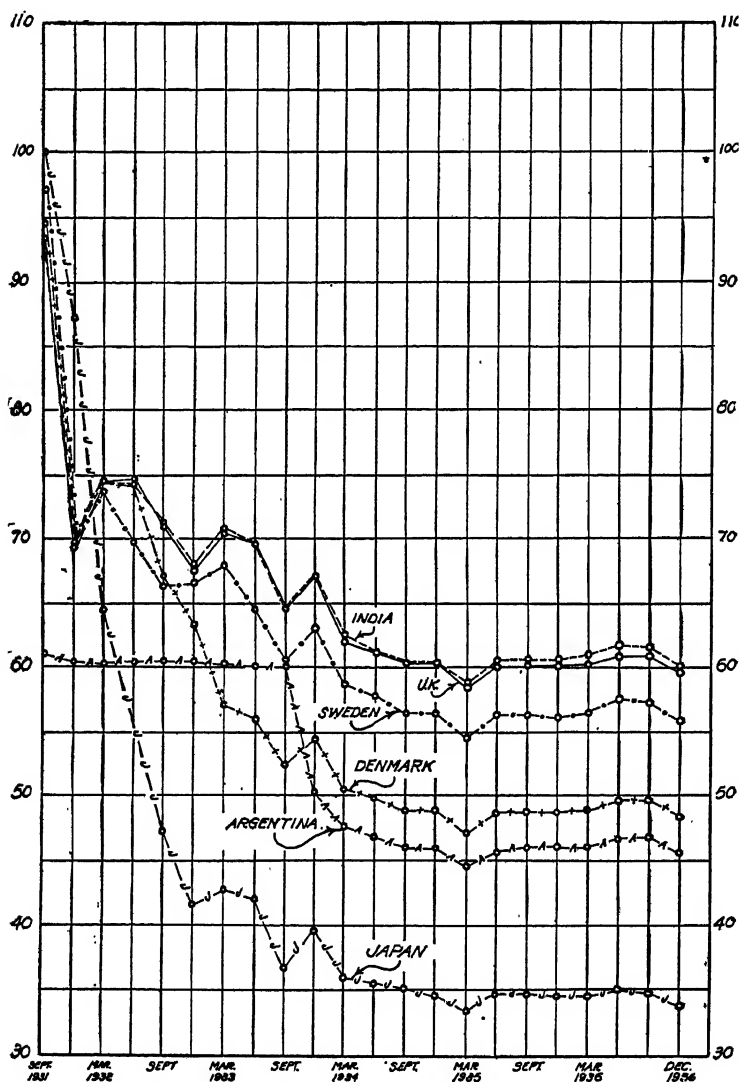


CHART 1. DEVIATION OF EXCHANGE RATES AWAY FROM GOLD PARITIES OF 1929 OF REPRESENTATIVE STERLING-AREA COUNTRIES. 1929 Gold Parity = 100. Source: League of Nations, *Monetary Review*, 1937, pp. 112-113.

own currencies and the pound sterling. They elected, therefore, to tie their currencies to the depreciated paper pound rather than to try to cling to the gold standard. The central banks of these countries maintained reserves in the form of London balances. The procedure was almost identical with that under the postwar gold exchange standard, except that their currency was maintained at a fixed relation with and was convertible into paper pounds instead of a gold standard currency. Further, unlike the gold exchange standard, the parities maintained with sterling were not rigidly fixed but were allowed to shift somewhat as national interest seemed to dictate. England plus the countries which tied their currencies to the pound were popularly known as the "sterling bloc" or the "sterling area." Chart 1 shows the relation of the currencies of these countries to the pound. It clearly shows that the tie-up with sterling was at best a loose one. In general, countries not under British control allowed their currencies to depreciate somewhat more than did the pound before beginning their stabilizing efforts. Moreover, if it later seemed desirable, still further depreciation was permitted.³²

Managed Paper Standards

Many unkind things have been said about inconvertible paper currency. This is hardly surprising when we remember the circumstances surrounding most of the world's experiences with such standards. One need only recall the French assignats, the Continental currency of our own Revolutionary War, the Civil War greenbacks, and the postwar German marks to understand the skeptical attitude toward paper money. To the average person, it is synonymous with uncontrolled and uncontrollable price inflation, with all its connotations. But to no small degree this unsavory reputation is the result of an association with difficult and troublous times. In a world wedded to the ideal of a gold or other metallic standard, inconvertible paper has been used only as a last resort when economic and political circumstances were so distorted as to make adherence to metallic standards untenable. Thus, inconvertible paper money has inherited a reputation in economic thinking which is by no means entirely deserved. The experience of England and the sterling-area

³² For more detailed information as to the actual rates of exchange between the pound and other sterling-area currencies, see the League of Nations, *Monetary Review, 1936-37, 1937*, pp. 19-22. Thirteen countries were listed as being in the sterling area. They were: Sweden, Finland, Denmark, Norway, New Zealand, Portugal, Japan, South Africa, Siam, India, Australia, Estonia, and Argentina.

countries after 1931 must have dispelled a great deal of suspicion formerly held by conservative persons.

Today as never before, statesmen and economists are seriously pondering the possibilities of providing their individual countries with a money mechanism more satisfactory than gold. Many have come to believe that inconvertible paper under normal circumstances and intelligent control might provide greater stability of prices and business activity than is provided by gold, which at best is only a fair-weather standard.

The advantages of pure paper standards. The primary advantage claimed for the pure paper standard is its susceptibility to management. Management of the gold standard is limited by the necessity of keeping the price level in its proper relation to prices in the rest of the world. No such limitation applies to the attempts to manage pure paper currency, for equilibrium in trade relations with foreign countries is achieved simply by allowing the exchange rates to change appropriately. With a pure paper currency, therefore, the monetary authority might pursue a policy of price stabilization or control best calculated to promote business stability. Outside price movements, both cyclical and secular, might then be completely disregarded. Further, the use of a pure paper currency frees the country from the distressing deflationary effects of heavy gold drains which become cumulative in times of severe world-wide depressions.

Objections to pure paper currency. The most serious objection to the use of managed paper currency is the certainty that it would lead to exchange instability whenever external prices moved more than domestic managed prices were permitted to move. Exchange instability is a serious defect. It invites speculation and therefore requires exchange controls to counteract the speculator who would otherwise magnify the normal fluctuations. It embarrasses foreign traders. Finally, it makes international lending so hazardous that the volume of long-term capital exports would probably be at a minimum. Along with the positive weaknesses of the pure paper standards, one must not neglect the fact that many of the advantages claimed for managed paper currency are not at all certain of realization. It is by no means certain that either our instruments of monetary control or our standards of monetary policy will prove successful.

Enough has been said here to indicate something of the problems which attend the use of pure paper currency. These problems will be examined more fully in Chapters XXXIX and XLVII.

CHAPTER IV

THE BANKER'S PLACE IN ECONOMIC SOCIETY

WE HAVE already learned something of the importance of bank credit or "bank money" in the modern monetary system. Most of our supply of "effective money" in common use by the general public takes the form of bank notes and bank deposits. It is necessary, therefore, that we now make a careful examination of the mechanism, the operations, and the principles of banking. This will provide the background needed for the later analysis of the theory of money and prices and an exploration of modern monetary problems.

Banks as financial institutions. An approach to the subject of banking may be made most easily by examining the larger general field of financial institutions to which banking belongs. A financial institution may be defined as an organization through which funds in the form of money or claims to money are assembled and transferred from those individuals and firms having a surplus of economic goods (as represented by such funds) to other individuals and firms whose needs for funds exceed their existing supply.

Economic desirability of financial institutions. It is easy to understand why financial institutions have become so essential a part of modern economic life when one considers that specialization and competition have tended to place in control young and energetic individuals equipped with the necessary talents but lacking the required capital. Any means of transferring capital from the hands of its owners to the eager hands of the businessman is certain to be looked upon with favor by both the lender and the borrower. Not only are the immediate parties benefited by the existence of financial institutions, but also the welfare of economic society as a whole is promoted. If the process of assembling and redistributing capital funds is wisely carried out,

the result is a more effective distribution of capital funds and capital goods than would otherwise be possible.

Types of financial institutions. The stock market, using the term in its widest sense, is one important type of financial institution. Through its operations, funds of speculators and investors are put into the hands of corporations whose stock is being offered for sale. It facilitates the exchange of funds intended for permanent investment for certificates of stock representing ownership.

Investment bankers, bond houses, security companies, and underwriting syndicates act as intermediaries between persons needing capital funds and the investors. By purchasing securities with funds at their command, the investment bankers are able to seek out potential investors and induce them in turn to purchase securities. Somewhat akin to the activities of investment bankers are those of the different varieties of investment trusts, which issue their obligations to investors and use the proceeds for the purchase of securities. The trust departments of banks and trust companies also perform the functions of financial middlemen. Life insurance companies, accumulating reserves through their use of straight-line premium payments and endowment policies, constitute another special form of financial institution. Bill brokers and commercial paper houses, although less in the public eye, are also important cogs in the financial machinery.

It is with those institutions commonly called banks that we are primarily concerned here. Banks might logically be divided into two classes—savings and commercial: savings banks proper, to receive only deposits which are not subject to check, and commercial banks, to accept demand deposits. In practice such a division cannot be made, since the savings and commercial banking functions are frequently, if not normally, carried on by the same bank. These two functions, however, are sufficiently different to warrant separate consideration.

Savings banks. The savings bank presumably gathers in the thrift accounts or the "rainy-day" savings of the poor and middle classes, promises to return the money deposited on due notice (normally waived), and invests the funds in conservative securities, mortgage loans, or other earning assets. The depositor benefits by receiving interest on his funds, by the security derived from the expert diversification of investments provided by the bank, and by the protection arising from the bank's capital, sur-

plus, and undivided profits (or surplus, if it is a mutual savings bank). In case of loss on the bank's investments, the bank's capital and surplus act as a guaranty against loss for the depositor. The savings bank furnishes the small saver with a service which is not available to him through any other financial institution.

The commercial bank. In contrast to the savings bank, which holds thrift accounts and time deposits intended for more or less permanent investment, the commercial bank acquires the short-time, temporary surpluses of individuals and business houses. A person may deposit his salary check and draw on the account so established during the interval before he receives additional income. The business house, because of the failure of income to synchronize perfectly with outgo, will normally carry some surplus funds on deposit with the bank. This surplus will sometimes be great and sometimes small. At times of heavy expenditure it may disappear altogether, and the depositor will be forced to borrow.

A commercial bank with only one demand depositor would be unable to make any loans because of the uncertainty as to when the depositor would demand payment. However, a bank with a thousand depositors can rely upon the law of averages to come to its assistance. Although it is difficult, if not impossible, to predict the behavior of any one depositor, it is possible through experience to determine the probable aggregate behavior of a large number of depositors, some of whom are drawing out their funds while others are building up theirs. If allowance is made for the seasonal bias (if any) of a group of depositors, the banker can tell within reasonable limits what proportion of his total deposits will normally remain untouched by the day-to-day withdrawals and deposits of his customers. Since this is so, the banker is able to lend on short time and good security a given proportion of his deposits without facing any shortage of funds for meeting customers' demands.

It follows, therefore, that the commercial banker is able to act as an intermediary between the owners of short-time surplus funds and would-be borrowers. Without the intervention of the commercial bank, an individual would find it difficult to lend short-time surplus funds, both because of the uncertainty as to the amount that can be spared for any given time and because of the difficulty of appraising the credit standing of the borrower.

The commercial bank thus serves the depositors, the borrow-

ers, and itself. The depositors gain by getting a free service¹ in the custodianship of their funds, plus the added service of an active checking account. In the past, the more valuable demand deposits received a small interest payment, although this practice is now prohibited by law for all insured and Federal reserve member banks. The borrower gains by having available an institution capable of evaluating his needs and his prospects and willing to advance him funds. The bank itself profits by furnishing a service to both the borrower and depositor, and may therefore pay dividends to its stockholders as a result of wise and successful operations.

Economic function of commercial banks. Commercial banks are of definite advantage to their depositors. They protect depositors' funds from loss and theft and furnish the means for convenient and safe transfer of funds through the use of checks. Demand deposits are quite superior to actual cash, a fact which makes them universally acceptable among persons who can afford them and which enables banks to maintain a volume of deposits several times as large as the volume of their cash reserves. The commercial bank with unused reserves is thus able to grant loans to borrowers in the form of demand deposits, which can be spent like cash. Thus, not only do the commercial banks serve the depositors, but they also afford the borrowers a convenient and economical way of acquiring short-term capital funds.

Granting, then, that commercial banks serve both depositors and borrowers, do they actually contribute anything to the general economic welfare? Are they of any genuine economic service? The fundamental economic services of commercial banks may be divided into two main classifications. The first is the convenient and economical method of payment which they make available through their efficient system of clearing and collecting checks. Demand deposits are thus transferred from one owner to another and furnish one of the most important types of currency. The economic world is, of course, interested in the soundness of bank deposits and the effective manner in which they are interchanged. Not only is the soundness, and hence the acceptability, of demand deposits vitally important, but also their quantity holds great interest, since the quantity of effective money in the country changes mainly as does the quantity of demand deposits.

¹ This is not strictly correct, since depositors failing to carry adequate balances to compensate the bank for its trouble may be compelled to pay a "service charge."

A second service rendered by commercial banks has reference to their effect on the volume and distribution of actual capital. The volume of capital goods in an economic community is affected by the financial institutions which are available. Thus the investment banker and the savings bank may be said to promote capital accumulation by providing a convenient channel through which savings may be intelligently and profitably invested. Likewise the commercial banks affect the volume of capital accumulations. They differ from savings and investment banks, however, in that the latter are instruments for the accumulation of voluntary savings, while the commercial banks promote forced or involuntary saving.

If we view the commercial banking system as a whole, we find not only that loans are dependent upon the volume of deposits, as in the case of individual banks, but that deposits, in the main, are the result of loans. From the standpoint of all the banks, new additional loans merely result in new demand deposits, first in the hands of the borrowers and later in the hands of those from whom the borrowers have purchased goods and services. The borrowers who are making new loans at commercial banks, at the time when such loans and deposits are increasing, are in need of capital. At whose expense, we may ask, is this capital obtained? The banks have put new purchasing power (demand deposits) into the borrowers' hands. The borrowers are thereby enabled to bid up the price of goods. To the extent that consumers must restrict consumption because of the higher prices, the expansion of loans and deposits results in capital accumulation. We may say, therefore, that the volume of capital goods represented by the bulk of commercial bank loans has resulted from the forced saving process, which has both advantages and disadvantages. The main advantage lies in the fact that it increases the ease with which new capital may be captured and transferred to business enterprises in a rapidly growing economy.

Two possibilities exist in this connection. If the expansion of bank loans and deposits occurs at a time when the productive facilities of the capital goods industries are not fully occupied, the spending of the newly created money will result in an increase in the total flow of capital goods. This added supply of capital results from the use of what was previously idle time. No one, therefore, is compelled to restrict his consumption in order that the supply of capital may be increased. Those persons and business firms which ultimately absorb the increased supply of money into their cash balances are, however, refrain-

ing from spending, and in a sense may be said to have contributed the capital saved. Whether or not it is appropriate to consider this "forced saving" is perhaps debatable. On the other hand, in case the expansion in bank credit occurs at a time when productive facilities, including labor, are fully employed, the spending of the new money can only raise prices. To the extent that consumers must restrict their consumption because of the higher prices, the expansion of bank credit leads to the accumulation of capital through the forced saving process. That part of the supply of capital goods represented by bank loans and investments made during periods of business boom have resulted largely from this forced saving process.

The disadvantages lie in the errors and the disequilibria likely to arise as a result of the very ease with which capital can be accumulated by forced saving, as well as in the dangerous inflationary results which are its necessary accompaniment.

The effective distribution of existing capital is accomplished by commercial banks in two ways. First, the banker, in self-protection, must seek to make his loans to the best borrowers, who are, of course, those who offer the best rates of interest compatible with good security, and who are therefore persons or firms in a position to utilize borrowed funds most profitably and effectively. Thus, the banker is instrumental in getting capital into good hands. In this respect, however, the commercial banker is in a position no different from that of the savings banker. But in another respect his function is different. A very large part of the loans of commercial banks are intended to care for the short-time capital needs of business. Quite irrespective of changes in the total volume of commercial bank loans and deposits, the loanable funds are shifted from one borrower to another as needs arise. It is apparent that this is of immediate advantage to businessmen, who are thereby enabled to operate with a smaller volume of capital funds, either owned or borrowed at long term, since they can borrow short-term funds to care for seasonal and irregular needs. Thus, the commercial bank may be said to economize in the use of capital funds by enabling businessmen to dovetail their short-term capital needs. It does not necessarily follow, however, that this saving to the businessmen is advantageous to the economic system as a whole. To prove the existence of any general economy, it must be demonstrated either: (1) that the opportunity for short-term loans reduces the volume of idle capital goods; or (2) that it increases the efficiency in the distribution of capital funds and goods. At first

glance it appears that the reduction in the volume of capital required by businessmen must bring a reduction in idle capital goods. But idle cash capital is not the same thing as idle capital goods. If businessmen were unable to obtain short-term loans, but instead carried more idle cash in off-season periods, they would still release short-term capital to others by restraining their purchases at times when others were in need. The liquid capital goods supply would still be mobile and free to change its direction at the summons of new buyers who had previously been holding off the market. We must, therefore, look elsewhere for the special advantage arising from commercial banks.

The peculiar service performed by the commercial bank arises from its power to introduce flexibility into the capital equipment of businessmen. It is a well-known fact that the economic system is in a constant state of flux. Demand for the products of different firms and industries is continuously varying, both with seasonal changes, which are partially predictable, and with the quite unpredictable changes in agricultural output, styles, popular tastes, and costs of production. In order for these changing demands to be met, capital funds must be shifted from industries with declining demand to those with an increasing demand. Such shifts, if predictable, might take place easily without resort to short-term loans. But even seasonal changes can by no means be accurately forecast. Variations in crops, temperatures, and length of seasons make for changing and uncertain seasonal requirements, while variations arising from the dynamic, growing nature of economic life introduce a large unpredictable element into the capital requirements of individual firms.

Let us examine the situation which would arise in the face of these unpredictable changes in capital needs in a society not provided with short-term loan facilities. Let us assume that there has been a decline in the demand for the services of fruit canners, owing to a fruit shortage, and an increase in the demand for the services of dealers in and processors of grain, arising from a large grain crop. Under these circumstances, the canners will reduce their scale of operations, and in so doing increase their hoards of cash capital. With no access to short-term loans, the grain dealers and processors would be confronted with the task of expanding their purchases of grain, labor, and supplies within a short period of time, with only the cash capital which they estimated as sufficient for an ordinary and smaller supply. (We may properly assume that they would not be able to increase their cash capital to meet the emergency by borrowing in the

long-term capital market.) The results could only be a disastrous depression of the market price of grain owing to causes quite remote from the long-run effects of consumers' demand. In addition to the effect on grain prices and market, the lack of a short-term loan market has its depressing effects arising from the fruit canners' position of increased cash hoarding. This hoarding withholds from the pockets of ordinary consumers' cash funds which normally would be spent. The reduction in consumers' incomes would reduce by that amount the monetary demand for consumers' goods.

On the other hand, if commercial banks have loaned to the canners, the slump in canning will permit the canners to reduce their borrowings at the banks, which in turn can advance funds to the grain interests. As a result, there will be much less effect on the volume of funds in consumers' hands (since reduced spending by canners is offset by increases in the grain market). Short-term loans are essential to an easy, smooth adjustment to meet the assumed conditions. The same argument holds in respect to the development of any industry at the expense of another, an everyday occurrence in a dynamic society. Here, too, the short-term loan market permits one industry to relinquish part of its capital and another to gain it with a minimum of disturbance. Even when a growing industry needs capital from the long-term market, the short-term loans of the commercial banks (whether or not they result in forced saving) hasten the process by advancing funds to security underwriters and others in the security market.

CHAPTER V

THE NATURE OF A BANK

NOT ONLY do banks act as channels through which funds flow from depositors to borrowers, but they also guarantee that the depositors' funds will not be lost. In order to accomplish this, it is necessary that a bank possess capital assets of its own out of which it can make up losses that may occur through the default of borrowers. This capital constitutes the owners' equity or investment in the bank.

Type of organization. Two types of business organizations are found among banks. In the first and more common type, the organizers of a bank obtain either a Federal or a state charter by conforming with the requirements of the general incorporation laws regulating the organization of banks. In the second type of organization, the organizers operate a private, unincorporated bank. The advantage of the latter type of bank has frequently been: (1) ease and simplicity of organization; (2) freedom from the capital requirements placed upon incorporated banks; and (3) freedom from supervision and regulation. Although there have been many exceptions, unregulated private banking has, by and large, proved unfortunate to the depositors and to the public, so that some measure of control has generally been set up. Such regulation varies from complete prohibition of any private banks to supervision over the private banking practices. The Banking Act of 1935 provides that no concern other than a regularly supervised bank may accept any deposits except those from its own employees unless it submits to an examination by the banking authority of the state, territory, or district in which it operates, and unless it publishes periodic reports.

Incorporation of banks not only benefits the public by subjecting banks to more strict regulation, but is also of obvious advantage in raising the necessary volume of capital. The organizers of banks have a choice between state and Federal charters. Banks organized under the banking laws of a state

are called "state banks," while those organized under the Federal laws are called "national banks." The type of charter which is preferred depends somewhat upon the kind of banking in which the organizers expect to engage. For example, if a nonstock mutual savings bank is to be organized, it must be done under state laws. Also, if a bank wishes to engage extensively in lending on real estate security, the opportunities are frequently greater under state than under Federal law. Likewise, capital requirements are sometimes less rigid under state than Federal law, and the supervision of state banks has frequently been less strict.

Bank stock. Before 1933 the owners' capital in banks was obtained exclusively by the sale of common stock. Such stock was subject to double liability in the case of national banks, a provision generally applicable to state banks as well. This meant that in case of failure the stockholders might be assessed an amount equal to the par value of their stock to help reimburse the depositors. Further, banking laws generally provide that in case a bank suffers losses great enough to reduce the stockholders' equity below the par value of the capital stock, the stockholders must pay in an amount sufficient to replace the deficiency. The double liability provision has not proved to be of any great benefit to depositors of closed banks. When occasion arose, therefore, in 1933, requiring the sale of a large amount of capital stock to rehabilitate banks which were in trouble, it seemed advisable to abolish double liability in order to enhance the attractiveness of the new stock issues. Consequently the Emergency Banking Act of 1933 provided that new stock sold by national banks should be free from double liability. In 1935 the national banking law was amended further to enable national banks to terminate double liability on all stock on July 1, 1937 or later, after publication of six months' notice. The double liability requirement on state bank stock is written into the constitutions of many states, and its removal, consequently, must wait upon constitutional amendment. To reduce this disadvantage of state banks, Congress, on May 25, 1938, amended Section 12B of the Federal Reserve Act to permit the Federal Deposit Insurance Corporation to waive any claim which it might have for double liability against the stockholders of failed state banks where double liability has not already been abolished.

The emergency of 1933 required more additions of capital to those banks reopening after the banking holiday than could

readily be obtained by the sale of common stock to the general public. Consequently national banks were empowered to issue nonassessable preferred stock, free from double liability, for sale to the Reconstruction Finance Corporation. State banks also sold preferred stock where permitted by law or sold capital notes and debentures to the RFC.

Another means of increasing the capital funds of banks is provided in laws requiring the accumulation of a surplus which represents additional contributions of stockholders. The national banking laws were amended in 1935 to require that any newly organized national bank must have a paid-in surplus equal to 20 per cent of its capital before it may commence business.¹ Further, a national bank must devote not less than one tenth of its net profits to surplus until the latter is equal to the common stock.

The Bank Statement

It may almost be said that a bank is a bookkeeping institution which shifts paper claims about among various individuals or business houses. It receives, as deposits, claims against other banks. It makes loans through mere book entries. The number of employees engaged in keeping the accounts and signing orders may exceed the number engaged in handling various forms of money. Consequently, an understanding of a bank's operations may perhaps best be derived by beginning with an analysis of the results of these bookkeeping activities in the form of a statement of the bank's resources and liabilities. Such a statement gives a cross-section view of the bank's affairs as they exist at the time the statement is drawn up and thus affords the student of banking a glimpse of the banking function.

Bank statements, as such, are common enough to excite little interest in the mind of the man in the street. Published statements of national banks appear regularly in the home-town newspapers at the date when the Comptroller of the Currency calls for reports. These reports must be made at least three times a year or oftener, as the Comptroller may require. Similar reports appear for the state banks. In spite of the relative frequency of these published reports, they are usually of slight value to bank customers who are anxious to learn something of the affairs

¹ This does not apply to state banks which are being converted into national banks.

of the bank with which they deal. This is true for several reasons. First, the average person is not conversant enough with banks and banking affairs to understand the significance of the items appearing in the published report. Moreover, many banks combine the items making up their resources and liabilities in such a way that even an expert would be unable to discover the real position of the bank. Finally, the reality of the picture of the bank's affairs given by the bank statement depends upon the accuracy of the accountant's estimate of the value of the bank's resources and the completeness of his enumeration of its liabilities. Banks sometimes operate for a number of years without writing off their losses. When this happens, the resources of the bank appear larger than they actually are, and the bank may retain the confidence of the public even when the real conditions do not justify it. Some conservative bankers conceal certain assets such as real property owned by the bank. Some years ago, a prominent Chicago bank evaluated its bank building, containing much valuable office space and located at an important corner of the Loop, at the sum of one dollar.

Although the bank statement may often reveal less of the true condition of the bank publishing it than one might desire, it is nevertheless a valuable device for giving an idea of the manner in which banks operate. The following bank statement illustrates the usual form of published statement, which gives the outsider little clue to the details but states its facts in broadest outline:

REPORT OF THE CONDITION OF CONTINENTAL ILLINOIS
NATIONAL BANK AND TRUST COMPANY

Statement of Condition, June 30, 1941

Resources:

Cash and Due from Banks	\$ 613,604,317.32
United States Government Obligations, Direct and Fully Guaranteed	794,435,700.00
Other Bonds and Securities	66,330,861.06
Loans and Discounts	248,168,150.26
Stock in Federal Reserve Bank	2,700,000.00
Customers' Liability on Acceptances	559,572.83
Income Accrued but Not Collected	2,660,422.95
Banking House	12,150,000.00
Real Estate Owned Other Than Banking House	2,315,500.67

\$1,742,924,525.09

REPORT OF THE CONDITION OF CONTINENTAL ILLINOIS
NATIONAL BANK AND TRUST COMPANY: (Cont.)

Liabilities:

Deposits	\$1,609,637,608.67
Acceptances	613,189.50
Reserve for Taxes, Interest, and Expenses	5,014,513.33
Reserve for Contingencies	17,359,273.31
Income Collected but Not Earned	395,403.99
Common Stock	50,000,000.00
Surplus	40,000,000.00
Undivided Profits	19,904,536.29
	<hr/>
	\$1,742,924,525.09

United States Government obligations and other securities carried
at \$173,228,329.29 are pledged to secure public and trust deposits and
for other purposes as required or permitted by law.

The detailed statement. The statement below, published by the Federal Deposit Insurance Corporation, gives more details of the operations of banks. Such detailed statements as these are not published for individual banks.

SUMMARY OF ASSETS AND LIABILITIES OF OPERATING
INSURED COMMERCIAL BANKS, DECEMBER 31, 1940,
UNITED STATES AND POSSESSIONS

(Amounts in thousands of dollars)

Number of banks	13,438
ASSETS	
Cash, balances with other banks, and cash items in process of collection:	
Currency and coin	\$ 1,235,272
Reserve with Federal Reserve banks	13,991,733
Other balances with banks	8,216,151
Cash items in process of collection	2,847,322
	<hr/>
Total cash, balances with other banks, and cash items in process of collection	\$26,290,478
Securities:	
Direct obligations of the United States Government	\$13,344,441
Obligations guaranteed by the United States Government	3,719,465
Obligations of Government corporations and agencies, not guaranteed by the United States Government	528,474
Obligations of States and political subdivisions	3,608,290
Other securities	2,962,658
Total securities	24,163,328
	<hr/>
Loans, discounts, and overdrafts (including rediscounts)	\$18,397,775
	<hr/>
Total loans and securities	\$42,561,103

THE NATURE OF A BANK

SUMMARY OF ASSETS AND LIABILITIES OF OPERATING
INSURED COMMERCIAL BANKS, DECEMBER 31, 1940,
UNITED STATES AND POSSESSIONS: (Cont.)

Miscellaneous assets:

Bank premises owned, furniture and fixtures	\$1,071,420
Real estate owned other than bank premises	339,567
Investments and other assets indirectly representing bank premises or other real estate	123,168
Customers' liability to reporting banks on acceptances outstanding	83,640
Other miscellaneous assets	250,649
Total miscellaneous assets	1,868,444
Total assets	\$70,720,025

LIABILITIES**Deposits:**

Individuals, partnerships, and corporations:	
Demand	\$32,400,651
Time	15,002,262
States and political subdivisions	3,820,675
United States Government	666,357
Postal savings	69,110
Other banks	10,539,096
Certified and officers' checks, cash letters of credit and travelers' checks outstanding, etc.	971,452
Total deposits	\$63,469,603
<i>Demand</i>	<i>\$47,716,084</i>
<i>Time</i>	<i>\$15,753,519</i>

Miscellaneous liabilities:

Bills payable, rediscounts, and other liabilities for borrowed money	\$ 11,481
Acceptances executed by or for account of reporting banks and outstanding	98,056
Dividends declared but not yet payable	41,863
Other miscellaneous liabilities	425,569
Total miscellaneous liabilities	576,969
Total liabilities (excluding capital accounts)	\$64,046,572

CAPITAL ACCOUNTS**Capital accounts:**

Capital stock, notes, and debentures	\$ 2,872,070
Surplus	2,563,293
Undivided profits	838,132
Reserves for contingencies	336,776
All other capital accounts	63,182
Total capital accounts	\$6,673,453
Total liabilities and capital accounts	\$70,720,025

Definition of bank assets. Although some of the entries appearing in this statement need no explanation, others deserve some special attention in order that their meaning may be understood.

1. *Currency and coin* represents the till money carried by banks to meet customers' cash needs.

2. *Reserves with the Federal reserve bank* represents mainly deposits of member banks with the reserve banks and constitute the reserves which satisfy the legal requirements for member banks. Nonmember banks sometimes carry "clearing balances" with the Federal reserve banks, but the practice is infrequent and the balances of this type are unimportant.

3. *Other balances with banks* comprise the working balances carried by banks with each other. Such "Bankers' Balances" or "Due from Banks" items are carried as deposits with city correspondents. These balances furnish convenient means for facilitating the collection of checks drawn on banks in distant areas. The banks holding these reserve balances often undertake to collect checks drawn on banks in their districts and credit the amounts realized to the depositing bank's account. Likewise, when checks drawn on the local bank appear in distant cities and are sent home for payment, the local bank may remit amounts due by drawing drafts on its account in the city correspondent bank. Thus we see these balances performing a twofold function by acting as reserve funds and furnishing a means for handling the collection of checks.

4. *Cash items in process of collection* includes the following three groups:

- (a) "Exchanges for the clearing house" consist of checks deposited or cashed at the bank during the course of the previous business day, which are drawn on other banks located in the city or immediately surrounding territory and affiliated with the local clearing house. These checks will be presented through the clearing house to the banks on which they are drawn at the next clearing period.
- (b) "Collections in transit" include checks, drafts, and other items (payable in another city) for which the bank has given the depositor credit but which are not yet collected. When these checks and drafts are acquired, they are sent to the transit department, where proper disposal is made of them for collection. They

may be sent to the Federal reserve bank of the district if the bank is a member or clearing nonmember; they may be sent to a city correspondent; or they may be sent directly to the bank on which they are drawn for payment.

- (c) "Checks and other cash items" consist of local checks and drafts drawn on banks which are not members of the local clearing house. Miscellaneous cash items such as bond coupons, for which depositors get immediate credit, may also be included.

5. *Direct obligations of the United States Government* includes:

- (a) Treasury bills issued with original maturities up to 9 months.
- (b) Treasury notes with original maturities of from 3 to 5 years.
- (c) Long-term Treasury bonds.

6. *Obligations guaranteed by the United States Government* are the practical equivalent of the direct obligations of the government. They include guaranteed obligations of the Home Owners' Loan Corporation and the Federal Farm Mortgage Corporation.

7. *Other bonds and securities* comprises:

- (a) State, county, and municipal bonds, which represent conservative investments, less liquid than U. S. Government securities.
- (b) Stock in the Federal reserve banks, which consists of the shares which member banks must own to qualify for membership.
- (c) Other bonds and securities are made up of:
 - (1) Public service corporation bonds.
 - (2) Industrial corporation bonds.
 - (3) Stocks in joint stock land banks, stock in affiliated companies (held for purpose of control); and, where the law permits, other stocks held for any reason.

8. *Loans*, sometimes called "Loans and Discounts," includes the promissory notes and bills of exchange, secured and unsecured, offered to the bank in return for borrowed funds.

9. *Overdrafts* are asset items in the form of claims against depositors who have overdrawn their accounts. The bank has paid the overdraft and charged the amount against the depositor.

10. *Bank premises, furniture and fixtures, and other real estate* includes:

- (a) Property owned by the bank and used in the banking business.
- (b) Real estate owned by the bank not used in connection with the banking business. Such property generally has been taken by the bank on defaulted mortgages and is being carried temporarily by the bank until it can be disposed of on favorable terms.

11. *Customers' liability under letters of credit.* Customers of the bank who wish to import goods from abroad may find it desirable to obtain a banker's letter of credit, in which the bank agrees to accept and pay a draft drawn upon it by the foreign exporter, if the draft is drawn for the proper amount and accompanied by the proper documents of title to goods sold and shipped. The customer for whose benefit this letter of credit is sent is obligated to reimburse the bank. This gives rise to the item above sometimes appearing in bank statements.

12. *Customers' liability under acceptances.* When the drafts drawn under letters of credit described above have been accepted, the draft becomes an acceptance, and the customer's liability is consequently an obligation to reimburse the bank when the acceptance matures and is paid.

Definition of bank liabilities. The bank's liabilities may be divided into the three following classes: (1) deposits and liabilities to creditors; (2) reserve accounts or necessary deductions ahead of the stockholders' equity; and (3) the stockholders' equity.

1. *Individual demand deposits* comprise the following items:

- (a) Those which are subject to check and represented by entries in the customers' pass book.
- (b) Demand certificates of deposit, which are non-interest-bearing certificates sometimes used instead of cashier's checks and certified checks for making payments.
- (c) Cashier's checks outstanding, which are checks drawn on the bank by the cashier and issued to customers desiring an acceptable form of negotiable instrument or in payment of obligations of the bank itself.
- (d) Certified checks outstanding which arise from the request of depositors that checks drawn be certified by the bank. This binds the bank and makes the check

acceptable, since the bank cannot afterward refuse to honor the check because of stop orders, forgery, or insufficient funds. On certifying a check, the bank protects itself immediately by deducting the amount from the depositor's account.

2. *Individual time deposits* comprise:

- (a) Saving deposits, as evidenced by a pass book. They may be made at irregular intervals with interest allowed and computed at semiannual intervals (or oftener).
- (b) Time certificates of deposit, which represent the deposit of larger sums payable with interest at some stated date or upon notice of thirty days or more.

3. *Other banks' deposits.* The amounts due to banks (state, national, private, or foreign) constitute the balances of such banks deposited with this bank. Any amount due to the Federal reserve bank represents items sent to the bank by the reserve bank for collection, for which proceeds have been received but remittance has not yet been made.

4. *Letters of credit and bankers' acceptances* are liabilities incurred either through the sending out of letters of credit authorizing the drawing of drafts on the bank by travellers or foreign exporters, or through the actual acceptance of drafts after presentation.

5. *Bills payable and rediscounts* combined represent the volume of funds procured by the bank through borrowing or sale of indorsed commercial paper. It is obvious that bills payable are properly classified as liabilities. Rediscounted paper is also so classified, because the bank's indorsement thereon establishes its liability for ultimate payment in case the primary obligor fails to pay.

6. *Reserves* constitute the second general class of liabilities. These represent various deductions which must be made from the assets, in addition to the deduction of general liabilities to outsiders listed above, before a proper figure for the stockholders' equity can be ascertained. Among the reserves are:

- (a) Reserves for taxes accruing before tax-paying time.
- (b) Reserves for interest accruing on deposits.
- (c) Reserves for depreciation of buildings, furniture, and fixtures.
- (d) Reserves for depreciation of securities.
- (e) Reserves for contingencies—losses on bad loans and securities. These have been used to a great extent

during the last few years to care for the losses realized by banks.

7. *Capital stock, surplus, and undivided profits.* Finally, there is the liability of the bank to the stockholders. This liability, or the stockholders' equity, may be obtained by deducting from the total resources all the liabilities to outsiders, including the sundry reserve accounts. The remainder belongs to the stockholders. From this should be separated unpaid dividends, which are not, properly speaking, a part of the stockholders' equity. From the remainder it is customary to deduct the par value of the capital stock. The stockholders' equity over and above the capital stock is represented by the surplus and the undivided profits account. As the current operations return profits to the bank, they are credited to the undivided profits account, from which will be paid all dividends. Part of the profits remaining after dividends are paid are then transferred from undivided profits to surplus, as a means of serving notice upon dividend-hungry stockholders, as well as the general public, that such amounts are to remain as permanent additions to the stockholders' investment in the bank.

CHAPTER VI

THE BANKER AND CREDIT INSTRUMENTS

THE BANKER'S stock in trade consists largely of negotiable credit instruments. The deposits which he receives consist mainly of checks, drafts, and paper currency, all of which are negotiable. Only specie and minor coin are not negotiable in form, yet they, too, have some of the characteristics of bearer-demand negotiable instruments. When the banker receives a deposit, he may create a negotiable instrument directly if he gives the depositor a negotiable certificate of deposit, or indirectly if he enters the amount on the depositor's pass book so as to entitle him to draw checks. The loans and investments of a bank are in the form of negotiable instruments. It is evident, therefore, that the rules governing negotiable instruments are of great importance both to the bank and to those who deal with it.

Types of negotiable instruments. Negotiable instruments fall into two main classes: (1) promises to pay, which include promissory notes and certificates of deposit; and (2) orders to pay or bills of exchange. The latter may in turn be classified as: (a) trade bills or orders drawn on buyers of goods and services by sellers; (b) drafts drawn on banks by customers under an agreement to accept and pay when due; (c) bank drafts or orders drawn by one bank on another, calling for the payment of a certain sum of money to the payee out of the drawer's account; and (d) bank checks. When trade bills are payable at some specific future date, they may be presented to the drawee (the person ordered to pay) for acceptance. An acceptance consists of the signature of the drawee across the face of the bill, with or without accompanying words signifying that he will pay it when due. From that time on, the instrument is known as a *trade acceptance*. Drafts drawn on banks payable at some future date and accepted are known as *bankers' acceptances* or *bankers' bills*.

Test of negotiability. The law requires that a negotiable instrument: (1) be in writing and be signed by the maker or drawer; (2) contain an unconditional promise or order to pay a certain sum of money; (3) be payable on demand or at a fixed or determinable future time; (4) be payable to order or bearer; and (5) when addressed to a drawee, must name him with reasonable certainty.¹

Importance of negotiability. What difference does it make whether or not a credit instrument is negotiable? The answer is simply this: A person who receives a nonnegotiable instrument by purchase and assignment obtains, like any ordinary assignee, only the rights under the instrument which the previous holder had. If the title of the transferor was faulty in any particular, that of the transferee is equally faulty. For example, if the payee of a nonnegotiable instrument was unable to enforce it because he had been guilty of fraud in procuring the instrument, the person who received the instrument from such payee will also be unable to collect it for the same reason. However, a person who takes a *negotiable* instrument under such circumstances as to be considered a *holder in due course* may obtain better rights to collect it than had the person from whom he received it. This superior position of the holder in due course arises apparently from the fact that the courts are eager to facilitate the use of credit instruments. Their acceptability is considerably enhanced by the protection afforded the holder in due course.

A holder in due course is one who has taken an instrument: (1) that is complete and regular upon its face; (2) before it became overdue and without notice of any previous dishonor; (3) in good faith and for value; and (4) with no notice of any infirmity in the instrument or defect in the title of the person negotiating it.

Defenses against payment. The obligor of a negotiable instrument may refuse to pay and may set up a variety of defenses. These defenses fall into two classes, the first of which comprises those which are good and effective against any and all holders of the instrument, whether or not an innocent holder in due course. These defenses are absolute, or legal, as they are sometimes called. Under the absolute defenses come: (1) forgery, (2) infancy, (3) insanity, or (4) lack of delivery of an incomplete instrument. The other type of defenses is known as *personal defenses* and is available only against the immediate parties to

¹Uniform Negotiable Instruments Act, Section I

the instrument or some person other than a holder in due course. The latter is entirely free from defenses of this class. The personal defenses are: (1) fraud, (2) lack of delivery, (3) lack of consideration, (4) wrongful filling out of an incomplete instrument, (5) conditional delivery when the condition has not been fulfilled, (6) illegality, and (7) duress.

Material alteration. A material alteration of a negotiable instrument may consist of changes in: (1) the date, (2) the sum payable, (3) the time or place of payment, (4) the number or the relations of the parties, and (5) the medium or currency in which payment is to be made. It may also consist of the addition of a place of payment where none is specified, or any other change altering the effect of the instrument.

When a negotiable instrument is materially altered without the consent of all the parties liable thereon, it is void, except against any person who assented to or participated in the alteration, or against subsequent indorsers. However, a holder in due course who is not a party to the alteration may enforce payment according to the original tenor of the instrument.

Indorsement. A transfer of title to a negotiable instrument involves: (1) delivery alone by one having title, if the instrument is payable to bearer (except that a holder in due course gets title even if the transferor has no title); and (2) indorsement and delivery if the instrument is payable to a certain person or order. There are four common types of indorsement, of which the first is *indorsement in blank*. This consists of the mere signature of the indorser, and passes title with delivery. In addition to passing title, the indorser warrants: (1) that the instrument is genuine and in all respects what it purports to be; (2) that he has good title to it; (3) that all prior parties had capacity to contract; and (4) that the instrument at the time of his indorsement is valid and subsisting. Further, he promises that the instrument will be paid if properly presented when due. If the instrument is dishonored and proper notice is given of the fact, the indorser must pay it. After an instrument has been indorsed in blank, it becomes a bearer instrument, negotiable by mere delivery. A second type is the *restrictive indorsement*. This consists of the indorser's signature, accompanied by some expression which prohibits the further negotiation of the instrument. For example, an instrument indorsed "for collection" or "for deposit" is restrictively indorsed. The person taking an instrument so indorsed is presumed to have been aware of it and holds the instrument as the agent of the indorser; any proceeds realized are

held in trust for the indorser. Thus a person taking an instrument bearing a restrictive indorsement cannot become a holder in due course. A third type is the *special indorsement*, specifying the person to whom or to whose order the instrument is to be payable. Its further negotiation requires the indorsement of the indorsee. In case one to whom an instrument is specially indorsed transfers the instrument without indorsing, the transferee is entitled to the indorsement necessary to pass title. A *qualified indorsement* is the fourth variety. This results when the indorser adds to his signature such words as "without recourse," indicating his unwillingness to be bound for payment in case the instrument is dishonored. However, such an indorser assumes full liability for the warranties made by an indorser in blank.

Liability of the parties. The duty of the person of primary liability to pay a negotiable instrument may be qualified by the personal defenses if the instrument is not in the hands of a holder in due course, and in any event by legal defenses. Of the legal defenses, perhaps one of the most common is a forgery in the line of title. The holder in due course cannot recover if he is claiming either through a forgery of the maker's name (if a promissory note) or, in the case of any order instrument, a forgery of the name of the payee or anyone else to whom the instrument is specially indorsed. Moreover, if he receives payment and the forgery is subsequently discovered, the holder must refund the money received. But if a holder in due course presents a bill of exchange to the drawee for acceptance, and the drawee accepts, the holder in due course may enforce payment from the acceptor even though it later appears that the drawer's name was forged. Further, if a holder in due course of a check presents it to the drawee bank for payment, and receives payment, the bank has no recourse against the holder if it later discovers that the drawer's name is forged. This arises from the fact that when the drawee of a bill of exchange accepts (or pays) the same, he promises to pay (or actually pays), and admits the existence of the drawer, the genuineness of his signature, and his capacity and authority to draw the instrument.

In order to bind an indorser of a check on his promise to pay the instrument if dishonored, the check must be properly presented and notice of dishonor sent to the indorser. A check is deemed to have been presented in sufficient time to bind the indorsers if it is presented within a reasonable time after its last negotiation. Thus, a holder in due course may protect himself

by starting presentment, either by turning the instrument over to his bank or by other means, within the next business day after receiving it. In case of dishonor, notice must be sent to each indorser against whom the holder desires recourse. Notice of dishonor may be either in writing or oral, and given in any terms sufficient to identify the instrument and indicate its dishonor. When the holder gives notice of dishonor to one party, all other parties subsequent to the one notified may benefit from the notice. Notice of dishonor must be started so as to reach the party notified within the next business day if the parties live in the same place. Where the parties to the notice reside in different places, notice of dishonor must be deposited in the post office in time to go by mail the next business day, or, if there is no mail at a convenient hour on that day, by the next mail thereafter. If notice is not sent by mail, it must arrive within the time at which notice properly sent by mail would have arrived. Whenever notice is properly addressed and deposited in the post office (or box), the sender has given sufficient notice, even if the notice never actually arrives. A party receiving notice of dishonor has, after its receipt, the same length of time as the original holder for notifying and binding antecedent parties. Notice of dishonor may be waived.

A dishonored bill of exchange drawn or payable in another state (that is, a foreign bill) must be "protested"; otherwise the drawer and indorsers will be discharged. The protest must be annexed to the bill or contain a copy thereof and be under the hand and seal of a notary. It must contain the time, place, and fact of presentment and be sent as notice of dishonor to parties to be held. Any person liable on a bill to subsequent indorsees may waive protest, and this act also waives presentment and notice of dishonor.

Delay in the presentment of checks (unlike other forms of bills of exchange) discharges the drawer only to the extent of the loss which he suffers as a result of such delay. If the drawer has suffered a loss due to the failure of the bank on which the check was drawn, he can be held for payment only if presentment was made within a reasonable length of time *after the check's issue*. Most courts hold that, to be within a reasonable length of time, presentment must be started within the next business day after the check has been received by the payee.

CHAPTER VII

DEPOSITS

Importance of Deposits

Deposits and the bank's lending power. The lending power of any bank is determined by its available funds. These, in turn, are determined by the capital contributed by the stockholders and the deposits of the bank's customers. Not all of the bank's deposits may be lent, for experience and the law require that some cash be kept available to meet the demands of depositors. Fortunately for the banker, the cash or cash reserves need be but a fractional part of the bank's deposits. By the law of averages, new deposits by some depositors offset the withdrawals of others, so that there is slight probability that the bank will experience any large loss of cash in any normal business day. Profitable banking requires that these reserves be kept at the lowest practical limit in order that the loanable funds derived from deposits shall be at a maximum.

Since the loans of a bank are so directly dependent upon the volume of deposits which the bank can obtain, the bank quite naturally will attempt to expand its deposits. Moreover, other things being equal, the greater the bank's deposits per dollar of capital invested by the stockholder, the more profitable the bank will be for its owners.

Relation of deposits to capital. This quite natural tendency of bankers to expand deposits as far as possible on the basis of a given volume of capital is held in check by certain considerations. First, it is necessary for the banker, in order to command public confidence, to show a satisfactory relation between his own invested capital and deposit liability. The stockholder's own investment, with the liability, if any, for 100 per cent assessment in case of failure, stands between the depositor and loss. Disregarding the question of ability of the bank to pay on demand, the ultimate solvency of a bank is assured by the fact that the depositors cannot lose so long as losses resulting from

bad loans do not exceed the stockholders' investment. The capital fund, including the surplus and to a limited extent the undivided profits,¹ constitutes a guaranty fund for the benefit of depositors.

The banker must maintain a guaranty fund of sufficient size to command public confidence in the security of deposits placed in his bank. Because of the general absence of legal regulation of the matter, the responsibility for this in the past has largely rested upon the banker's own shoulders. Laws governing capital requirements were limited to fixing the minimum capital required for organizing banks in cities of any given size. Thus, to establish national banks in cities of not over 6,000 inhabitants, capital requirements are \$50,000; in cities of from 6,000 to 50,000 inhabitants, capital requirements are \$100,000; while in cities of over 50,000, capital requirements are \$200,000, save that in outlying districts national banks may be organized with \$100,000 capital if state banks are permitted to do so. State laws contain similar provisions.² But such regulations obviously cannot insure a proper ratio of owners' equity to protect deposit liabilities. However, there has been a growing tendency of late to require banks to maintain an appropriate volume of capital in proportion to deposits. A number of states have passed laws requiring the maintenance of a minimum ratio of capital to deposits.³

Even more important are the regulations of the supervisory authorities who, since the banking holiday of 1933, have tended quite generally to insist upon a rough adherence to the 1:10 capital-deposit ratio. Before 1929, few banks would have had any trouble conforming to this rule. Since 1934, however, the case has been somewhat different. Bank deposits have increased tremendously, both as a result of increased cash deposits growing out of gold imports and as an effect of the vast expansion in gov-

¹ A portion of the undivided profits may be expected to be withdrawn for dividend payment, and hence is not actually a part of the permanent contribution of the stockholders.

² For a compilation of State laws governing minimum capital requirements for state banks and trust companies, see the *Federal Reserve Bulletin*, December, 1940, pp. 1267-1274.

³ Thirteen states have statutory requirements of a minimum capital-deposit ratio of 1:10. The Indiana law permits the Department of Financial Institutions to require an increase in capital or a decrease in deposits if the net sound capital for the preceding year is less than 10 per cent of the bank's average daily deposits. Such action may not be taken if the bank's cash plus United States government securities (direct and guaranteed) amount to 50 per cent of the total deposits. Cf. Robinson, R. I., "Capital-Deposit Ratio in Banking Supervision," *Journal of Political Economy*, February, 1941.

ernment bonds held by banks. In the meantime, the relatively low earning capacity of the banks has made it difficult to sell additional stock, so that the capital-deposit ratio in many instances has fallen below 1:10. Now clearly there is nothing sacred about the 1:10 ratio. Like many rules of thumb, it seems to have been adopted because of convenience in calculation. There has developed, therefore, considerable opposition to the blind adherence to the rule. It is quite properly held that the size of necessary capital funds is more closely related to the type of assets than to the volume of deposits. Were a bank to carry all its assets in cash, there would obviously be no need for capital to protect depositors. Likewise, when a bank's earning assets consist mainly of government securities, there is need for but little owners' equity to provide adequate protection to depositors. There have been proposals that instead of a fixed capital-deposit ratio, a standard be set up based upon the class of assets held by the banks. Thus, against deposits represented by cash and highly liquid and safe bonds or open-market paper, the required capital ratio would be lower than against deposits backed by more hazardous and speculative assets.

Obtaining Deposits

Competitive methods. Subject to the limit set by the bank's capital and surplus, the banker is free to attract deposits in any way possible. He may erect an imposing building whose entrance is flanked by marble pillars, symbols of strength. He may expand the free services and conveniences available for his customers. He may advertise, in a restrained and dignified manner, on billboards and in newspapers. He may organize a "new business department" whose function is to make contacts with new customers. He may persuade the stockholders to elect a prominent business executive to the board of directors in order that all or part of the deposits of the executive's firm may be captured. Finally, he may compete with other bankers for deposits in a more direct way by offering higher rates of interest on deposits. This last form of competition has been especially important. A good many depositors are influenced by the interest payments and respond favorably to offers of higher returns. In so far as this is true, all banks are forced to some extent to offer higher rates to depositors. The practice reduces the profits of banking to such a degree that the banker seeks to increase his earnings by turning to less conservative types of loans and investments. Perhaps if all bankers could be trusted to refuse to make unsafe

loans under the stress of competition and profit-seeking, unlimited competition for deposits among bankers would have no dire results. What borrowers would pay for well-secured loans would fix the limit on interest payments to depositors. In actual practice, however, the banker cannot be trusted to watch competition cut into his profits without taking some action to prevent it. He may seek more speculative loans and investments bearing a higher rate of return. The evil consequences of such action are concealed during periods of prosperity, but depression reveals them. Experience has repeatedly shown the fatal results of such competition. To guard against excessive competition for deposits, clearing house associations have sponsored agreements among their members regulating competitive practices. Particularly, they have attempted to control the charges made by banks for services rendered to customers and the payment of interest on deposits. The Banking Acts of 1933 and 1935 recognized the need for regulation of competitive interest payments by prohibiting member banks from payment of interest on demand deposits and by providing that the maximum rate of interest paid on time deposits should be set by the Board of Governors of the Federal Reserve System. Further, it regulated the withdrawal of time deposits.

Regulation of interest payments. In December, 1935, the Board of Governors of the Federal Reserve System issued an amended form of Regulation Q, governing the payment of interest on deposits of member banks. Because the law prohibits all interest payments on demand deposits, a difficult question arose as to what was meant by "interest." For example, is the performance of valuable collection services for the depositor a form of interest payment? If there were no limits to such free services, the way would be opened for interbank competition, which the law intended to prevent. On the other hand, the task of laying down rules for determining the amount of such free services to be allowed was a complicated one. The board's first regulation defined interest as a "payment, credit, service, or other thing of value made or furnished by a bank as consideration for the use of the funds constituting a deposit and which involves the payment or absorption by the bank of out-of-pocket expenses. . . ." Payment or absorption of trivial and irregular expenses incurred for the depositor was not to be considered payment of interest where collection of a fee from depositors would cause "undue friction or misunderstanding," provided the bank acted in good faith in not using such practices as a means of

competition. This rule proved objectionable from two standpoints. First, member banks complained that its enforcement would drive the accounts of country banks into the hands of non-member banks. Second, it was extremely difficult to apply. Consequently its application was postponed, and the rule was finally abandoned altogether. In its place the Board of Governors, with the collaboration of the Federal Deposit Insurance Corporation, which is in control of interest payments on the deposits of nonmember insured banks, formulated a definition of interest. According to this definition, interest is any payment to or for the account of any depositor as compensation for the use of funds on deposit. The troublesome question of free services is thus avoided. Instead, the question of what constitutes interest payment in any particular case is left for "administrative determination under the general law in the light of experience, and as specific cases may develop."

Time deposits are subject to two limitations as to interest payments. First, member banks may pay no more (but may, of course, pay less) interest than that prescribed by the Board of Governors. Second, they may pay no more than the maximum rate permitted to state banks and trust companies. Under the 1935 banking act, the Board of Directors of the Federal Deposit Insurance Corporation is empowered and directed to put into force regulations on the payment of interest by nonmember insured banks. The maximum rates of interest which nonmember insured banks may pay on time deposits have been made the same as those for member banks. The maximum rates on time deposits fixed for member banks are shown in Table 1.

TABLE 1.

MAXIMUM RATES OF INTEREST ON TIME DEPOSITS OF MEMBER BANKS
(As Set by the Board of Governors of the Federal Reserve System)

	Nov. 1, 1933 to Jan. 31, 1935	Feb. 1, 1935 to Dec. 31, 1935	In effect beginning Jan. 1, 1936
Savings deposits	3%		
Postal savings	3	2½	2½
Other time deposits payable in:			
6 mo. or more	3		
90 days to 6 mo.	3	2½	2
Less than 90 days	3	2½	1

In some states, the state banking authorities have fixed maximum rates of interest payable on time deposits at figures lower than those set by the Board of Governors. In such states, the

lower state figures become the maximum which can be paid by all member banks.⁴

Withdrawal of time deposits. Not only are banks limited in their interest payments, but they are also subject to regulation as to the withdrawal of time and savings deposits. Section 19 of the Federal Reserve Act, as amended in 1935, prohibits the payment of time deposits before maturity, except in accordance with such rules and regulations as may be prescribed by the Board of Governors, and prohibits the payment of any savings accounts without notice unless all savings accounts are similarly payable. Likewise, time deposits payable on notice (except savings) are not to be paid until the expiration of the period of notice. However, the regulation of the board permits the payment of time deposits before maturity or the fulfillment of the notice period provided the depositor makes a written application showing that such payment is necessary to prevent "great hardship" in meeting an emergency. Such application must be approved by an officer of the bank and kept on file. On such withdrawals the depositor loses up to three months' accrued interest. Similar regulations of the Federal Deposit Insurance Corporation apply to nonmember insured banks. Banks may make loans on time deposits and savings deposits on which notice of withdrawal is enforced at rates not less than 2 per cent per year above the rate being paid the depositor by the bank.

Relation of the Depositor to His Bank

Creation of a deposit. Deposits in a commercial bank may be established in either of two ways. First, they may be created by the bank as a result of the extension of a loan to the customer. Such deposits are of a peculiarly ephemeral character, since they are almost certain to be withdrawn shortly after their creation. The more stable deposits of a bank, however, consist of funds placed in the bank's care for safekeeping and convenience. These funds consist of cash and negotiable instruments payable in cash.

If the depositor brings cash, checks, or such other cash items as bank drafts, high-grade bond coupons, and the like, he receives immediate credit on his account for the full amount, less any deduction made by the bank for collecting out-of-town items. This credit is given subject to the actual collection of

⁴ For a careful survey of the problem of regulation of interest paid on deposits, see Watkins, L. L., *Commercial Banking Reform in the United States*, 1938, *Michigan Business Studies*, Vol. VIII, No. 5, Part 2.

the proceeds by the bank. If the depositor brings in "collection items" such as notes of and drafts on business houses and less-known bond coupons, the proceeds, less charges for the collection services, are credited to the depositor's account when realized.

Within the bank, the funds deposited are handled in the appropriate manner. Checks on the bank itself go to the book-keeping department to be deducted from the drawer's account. Checks on other banks in the same city are sorted as to banks, indorsed, and sent to the clearing house at the next clearing period. Checks on out-of-town banks are sorted according to the bank to which they are to be sent for collection, indorsed "pay to any bank or banker, all previous indorsements guaranteed," and properly recorded before being sent to the appropriate bank for collection. These checks may be sent to: (1) the Federal reserve bank of the district, if the bank concerned is a member or a nonmember clearing bank; (2) to a correspondent bank; and (3) to the drawee bank itself. Collection items received are forwarded to the Federal reserve bank or some correspondent bank, which will present the draft, note, or coupon for payment, and remit the proceeds, less any charges. The depositor's account is then credited with the proceeds on their receipt by his bank.

Obligations of the bank to the depositor. The deposit of funds with the bank gives rise to definite obligations. The bank becomes a debtor, since the depositor normally surrenders all rights to the funds deposited in return for the bank's promise to pay on demand or notice, as the case may be. The bank is under contract to pay out the cash upon the bona fide order of the depositor to do so. This makes it essential that the bank verify the genuineness of the drawer's signature before paying, for if payment is made on a forgery, the bank naturally cannot deduct the amount from the depositor's account and cannot demand a refund from any innocent holder who may have presented the check for payment. Further, it must be certain that the payee's indorsement is genuine unless there is a subsequent indorsement of a responsible party upon which the bank can rely. This follows from the fact that not only must the bank make payment on the order of the drawer alone, but also must pay only to the payee designated, or to his order.

Other incidental responsibilities rest upon the bank. It must not pay a check before it is due; it must watch for discrepancies between the writing and the figures; and it must satisfy itself that the depositor has sufficient funds unless it is prepared to

grant him an overdraft. Care must also be taken to observe any stop-payment order which may be given by the depositor, since failure to do so would cause the bank loss of the amount of the check involved. Finally, it may be called upon to certify checks for depositors who wish to make payments where ordinary personal checks would not be acceptable. Certification is the statement written on the check by the bank to the effect that the check will be paid. The amount of the certified check is immediately deducted from the depositor's account and constitutes an addition to "certified checks outstanding."

Account analysis. There was a time, before the great depression of 1929, when bankers outside the more sophisticated financial areas of the large cities were inclined to the view that any and all deposits were desirable. Because bank operations were in general profitable, a rigid examination of costs seemed unnecessary. In those times housewives, armed with shopping list and check book, toured the towns and cities and left a trail of irregularly sized checks to mark their progress. The birth of a baby was the signal for the family banker to sow the seed of thrift by the gift of a toy bank containing a ten-cent piece. Small deposits were welcomed under the happy illusion that as big oaks from little acorns grow, so the small account might be expected to grow into a large and highly desirable one.

But these easygoing days disappeared quickly with the depression. Bankers were confronted with heavy losses to be written off, while earnings declined sharply under the impact of falling interest rates and shrinking loan volume. Bankers, therefore, began to listen to the earlier but largely unheeded advice of those who had urged them to look to their costs. It became imperative that they know whether or not depositors' accounts justified themselves and what to do about it if they did not.

The first requirement for evaluating the worth of a particular account is to estimate its contribution to the bank's loanable funds. This may be accomplished as follows:

1. The average daily balance for a given month is calculated by adding together the amounts standing to the credit of the depositor and dividing the total by the number of days in the month. If the account is given to a high degree of fluctuation, the minimum balance appearing in the account during the month may be of more significance.
2. From the average daily balance is subtracted the average daily "float" of uncollected checks for which the depositor has

been given immediate credit. The remainder is the collected or realized balance.

3. From the collected or realized balance is deducted the percentage of the total which must be set aside for reserves. Such reserves must include not only the legal requirements, but also any necessary till money and working balances carried as deposits in other banks.

4. The remainder is the amount actually available for investment. To calculate the earning power of this fund, it may be multiplied by the average monthly rate of interest earned by the bank's loans and investments. This calculation is subject to the objection, however, that it may overvalue the actual earning power of the account if excess reserves are high or if the account is of the sort which requires more than average liquidity.

The second step in evaluating the worth of a depositor's account is the calculation of costs to the bank incurred in handling it. Costs which may be properly allocated to depositors' accounts include: (1) the cost of handling checks drawn upon the bank by the depositors, (2) the cost of collecting local checks through the clearing house, (3) the cost of collecting checks on out-of-town banks, and (4) the cost of handling receipts of cash deposits. Before the bank can estimate the cost of handling the account of any particular depositor, it is necessary to determine the unit cost of each banking operation related to the handling of depositors' accounts and the number of such operations chargeable to the account in question.

To determine the unit costs of each operation, the total expenses of each department carrying out the functions related to deposits must be allocated to the several functions. In this manner the total cost for a given representative period may be obtained for (1) handling checks on the bank itself, (2) the clearing of local checks, (3) the collection of out-of-town checks, and so forth. The total costs for each function may then be divided by the number of items handled during the period and the unit cost or cost per item estimated. Such estimates are likely to be, at best, but rough approximations subject to the limitations of unit cost calculations in any business. Moreover, they do not cover the overhead costs of running the bank, but only the direct operating expenses of handling deposits.

Although the ideal way to obtain the item cost properly chargeable to depositors' accounts is to make a thorough cost study of the bank itself, in practice the majority of bankers do

not use this method. Instead, they tend to adopt, as applicable to their own banks, cost studies which have been made in other banks. Clearing house associations frequently adopt a uniform rate of charges based upon assumed uniform item costs for all of the affiliated banks. The item costs which are assumed as the basis of these charges may be based upon the cost analysis of one of the banks in the clearing house or, more frequently, upon some cost study made in another city. Any claim for exactness in the schedule of costs so adopted is therefore unwarranted. To illustrate such estimates of cost, the Research Committee of the Indiana Bankers Association found the following cost figures in three "competent" cost surveys:

<i>"On Us" Items</i>	<i>Transits</i>	<i>Clearings</i>
4.15765 cents	2.4959 cents	.83153 cents
5.536 "	3.15 "	1.839 "
5.1121 "	2.4909 "	1.3106 "

Because estimated unit costs include only direct operating expenses, before these costs are applied to the account some allowance must be made and added on for "profit." The Bank Management Commission of the American Bankers Association suggests that the mark-up of unit costs should be not less than 25 per cent and not more than 50 per cent.⁵

The application of the adjusted, marked-up item cost to a particular account is relatively simple. The number of items of each type which are handled for the account during the month is multiplied by the appropriate charge per item. The total item costs of handling the account can thus be estimated. To these costs are sometimes added a maintenance cost, which is applied equally to each account and is designed to cover the cost of providing pass books, balancing ledgers, and so forth. Another charge is one based upon the size of the account, and includes such costs as protective insurance, guards, any taxes on deposits, and FDIC assessments on demand deposits. Finally, the cost of rendering any special service to the depositor should be charged against the account.

The profit or loss realized by the bank upon a particular account may then be calculated by subtracting the costs from the earnings credited to it. If costs are above earnings, the depositor may be required either to increase the size of his collected balance or to pay a service charge.

⁵ *Uniform Account Analysis*, 1939, Commercial Bank Management Booklet No. 23.

Service charges. Two types of service charges are in common use, the "flat" and the "measured" charge. The flat service charge consists of assessing a monthly charge against accounts in which the average balance falls below a certain figure. Before 1930 this was the type of plan in use among the banks which made use of service charges. Although simple and easy to operate, such a plan is inequitable in that it does not allow for the differences in activity among accounts. For this reason the flat charge has generally been abandoned in favor of the measured type.⁶

Considerable variation appears in the application of the measured service charges. Many systems provide for a basic charge of 50 cents per month on accounts which fail to maintain an average or a minimum balance of \$50. Even more common is the application of a service charge of from 50 cents to \$1.00 on accounts not maintaining an average balance of \$100. It is common to allow a certain number of "free checks" in return for the payment of the minimum charge or for maintaining a certain minimum balance. Beyond this, the unit or item cost, adjusted for profit, is applied. Not all accounts are subjected to detailed analysis. Large accounts (\$500 or over being the most common dividing line) and active accounts are analyzed in detail, while smaller and inactive accounts are handled simply by the application of the basic monthly charge plus charges on checks drawn in excess of a specified number. The importance of service charges in bank earnings is indicated by the fact that in 1940 they constituted 5.7 per cent of the total earnings of member banks.

Classes of Deposits

Time versus demand deposits. A study of bank deposits is not complete without a more detailed consideration of the several types of deposits. Bank deposits may be classified in several different ways, the most common grouping being time deposits and demand deposits. The immediate purpose of such a classification is to determine the reserve requirements of banks which belong to the Federal Reserve System, since the law requires only 3 per cent reserves against time deposits while the reserves against demand deposits must be 7, 10, or 13 per cent, depending

⁶For a comprehensive examination of service charges, see the *Service Charge Survey*, 1939, Bulletin No. 77, Research Council, American Bankers Association. Also see the *Report of the Research Committee*, Indiana Bankers Association, 1937, Part II.

upon the classification of the city in which the bank is located.⁷ Another important reason for such a division of deposits lies in the fact that, in general, time deposits are thrift accounts, less subject to irregular withdrawal and more free from heavy seasonal withdrawals than the demand deposits. Because of this, it is normally possible for a bank to tie up funds derived from time deposits in more or less long-time investments, combining a reasonably high yield with good security. This can be done, since a high degree of liquidity is not required. On the other hand, demand deposits should be invested mainly in liquid loans or readily salable paper. This is true even if the general level of demand deposits shows no great tendency to fluctuate, since potentially demand deposits of any one bank are less stable than the time deposits. It should be noted that some time deposits representing the surplus funds of businessmen are essentially the same as demand deposits. They are classified under the heading of time deposits to enable the bank to carry smaller legal reserves and offer interest to the depositor.

Section 19 of the Federal Reserve Act, as amended in 1935, authorizes the Board of Governors to define demand and time deposits for the purpose of determining legal reserve requirements. In the new Regulation D, effective January 1, 1936, the board laid down the following definitions:

1. Demand deposits include all deposits except time deposits.
2. Time deposits consist of three classes: (a) time certificates; (b) time deposits, open account; and (c) savings deposits.
3. Time certificates of deposit are deposits evidenced by an instrument (negotiable or nonnegotiable) payable at least thirty days after the date of the deposit or upon at least thirty days' written notice and on presentation and surrender of the instrument.
4. Time deposits, open account, are deposits other than time certificates or savings deposits, in respect to which there are written contracts to the effect that neither all nor any part may be withdrawn prior to a maturity date at least thirty days after the date of deposit or without thirty days' written notice.
5. Savings deposits must be evidenced by a pass book and consist of funds deposited to the credit of individuals (except part-

⁷ These are the basic statutory reserve requirements; each may be increased to twice the amount by the Board of Governors of the Federal Reserve System. On November 1, 1941, reserve requirements were raised to the maximum limit by action of the board.

nerships operated for profit) or nonprofit organizations. Banks must have the right to require at least thirty days' written notice of withdrawal of such deposits. Payment is to be made only upon presentation of the pass book or directly to the depositor himself.

Kinds of depositors. A second type of classification of deposits is one based upon the kind of depositor, and may consist of the following:

1. Individual demand deposits, including deposits of business houses, and private business and personal accounts.
2. Governmental deposits including:
 - (a) Federal Government.
 - (b) State, county, and municipal deposits, and deposits of other governmental subdivisions.

TABLE 2
THE DISTRIBUTION OF DEPOSITS BY ECONOMIC CLASSES OF
DEPOSITORS, DECEMBER 31, 1937*
(In Millions of Dollars)

<i>Demand Deposits</i>		<i>Time Deposits</i>	
Total (Adjusted)	23,370		26,260
Total Business Deposits	7,740	Total Business ..	610
Manufacturing, mining and construction	3,450	Corporate	500
Transport and public utility	1,000	Non-corporate	110
Trade, service, and miscellaneous	1,590		
Non-corporate enterprises	1,700		
Total Financial	5,110	Total Financial ..	410
Insurance	890	Corporate	270
Other	1,500	Non-corporate	140
Security brokers	280		
Banks' trust departments	1,030		
Foreign banks	630		
Other foreign	780		
Public Bodies Total	3,640	Public Bodies Total	590
U. S. Treas.	970		
Other	2,670		
Unclassified, individual, and nonprofit		Unclassified, individual and nonprofit	24,650

* Wald, Haskell, "Deposits by Classes of Depositors," *Federal Reserve Bulletin*, May, 1940.

3. Bankers' balances (or due to banks), which represent the deposits of other banks maintained for the purpose of:

- (a) Facilitating the collection of checks.
- (b) Furnishing customers with city drafts.
- (c) Obtaining interest on idle funds (no longer true unless on time deposit).
- (d) Facilitating the lending of money on the call market.
- (e) Maintaining contacts with city correspondents to facilitate the sale of foreign exchange drafts.

Secured and unsecured deposits. A third type of classification might be made on the basis of secured and unsecured deposits. The ordinary depositor is merely a general creditor who shares in the remaining assets of a liquidated bank after the preferred claims have been met. The common method by which a banker prefers his creditors is through the acceptance of deposits requiring special security. Member banks which obtain deposits in excess of \$5,000 from the Federal Government must secure such deposits by pledging United States bonds or other approved collateral with the Secretary of the Treasury.⁸ Formerly, such deposits carried no legal reserve requirements. Since August 23, 1935, however, government deposits require the same reserves as other deposits. Similar regulations apply to deposits of state, county, and municipal governments. The deposit of funds by the trust department of a national bank with the banking department requires the setting aside by the bank of a sufficient amount of government securities to make certain that the trust department deposits are fully secured.⁹ The average depositor is seldom aware of the existence of depositors with preferred claims.

Perhaps it should be observed in passing that not only are the secured creditors preferred to that degree, but there are other claims which take priority over those of ordinary depositors. Any bank which is compelled to borrow funds to maintain its cash position must give the lender special security. Assuming that the lending bank (or other institution) requires ample security from the borrowing bank, to that extent the lender is in a position of preference over the ordinary depositor. This is true whether the borrowing bank obtains funds from its city correspondent, from the Reconstruction Finance Corporation, or from a Federal reserve bank.

⁸ Federal Reserve Act, Section 9, and Banking Act of 1935, Section 324 (d), amending Section 19, Federal Reserve Act.

⁹ Federal Reserve Act, Section 11 (k).

Protection of Bank Depositors

It is a fundamental principle of banking that protection for the bank depositor must come from sound banking assets. It follows from this that the same general measures which are designed to protect depositors are also beneficial to the stockholders, whose equity in the bank consists only of a residual claim against the assets.

The skill and honesty of the bank's management have a most important bearing upon the safety of the deposits. Barring some catastrophic upheaval in the economic life of the community, such as prolonged and acute depression, good bank management will adequately protect both the depositor and the stockholder. Because proper management is so essential to successful bank operation, and because the public interest is so closely tied up with successful banking, the state has seen fit to interfere to a varying extent in banking affairs in every part of the world. In the United States, governmental interference has become very involved and complete. Under the state and national banking laws, as well as the laws governing the Federal Reserve System, there has grown up an enormous mass of minute regulations, the majority of which are designed to safeguard the depositors and stockholders of banks. They include the regulation of the volume of capital and reserves and the type of loans and investments; the examination of the bank's affairs by representatives of the state; and the publication of reports of condition. The nature of these regulations will be studied in more detail in connection with the discussion of the topics to which they are related. There are, however, two varieties of attempts to protect depositors which may well be examined here. They are: (1) the segregation of thrift deposits and (2) the guaranty of deposits.

Segregation of thrift deposits. The advocates of segregation of thrift deposits propose that the deposits of a bank should be divided into thrift accounts and commercial accounts, each type to be kept entirely separate from the other. Funds derived from commercial deposits would then be lent or invested as usual, while funds from savings or thrift deposits would be placed in a special account and invested in an appropriate manner. Preferably, the investment of thrift funds should be regulated by rules similar to those normally governing the investments of mutual savings banks. Finally, the assets acquired through the investment of thrift funds should be set aside for the sole benefit of the

thrift depositors. Such a plan involves a complete departmentalization of banks so far as the two general types of deposits are concerned. It also should provide that a proportionate share of the bank's capital and surplus be allocated for the benefit of each type of deposits. This is essentially the plan provided by the laws of California.¹⁰ Although this procedure results in what is virtually a separate bank for each type of business, there is still the advantage of combining the several different banking services under the same roof and under the same management.

What are the reasons for segregation? Perhaps the reason most frequently given is that segregation of assets behind thrift accounts is necessary to protect the thrift depositor in case of runs on the bank. Thrift accounts, like all time deposits, are payable not on demand but at a certain designated time, or after the expiration of a given length of time after notice of intention of withdrawal is given the bank. Normally such deposits have been payable on demand, but under pressure banks are able to resort to their legal privilege of postponing payment by refusing to pay time certificates until due and by requiring notice on savings deposits. This policy puts the time depositors at a serious disadvantage in the event that confidence in the bank is impaired. The banker's efforts to remain open and regain lost confidence may result in a liquidation of the better assets to pay off the demand depositors, leaving the slow and perhaps poorer assets for the time deposits. Such situations have arisen, but the case for segregation of assets for thrift accounts is stronger if put upon other grounds.

It may happen that a bank with both demand and time deposits becomes subjected to a quiet run by the demand depositors which eventually drains the bank of its best and most liquid assets to the detriment of the holders of thrift accounts who were unaware of the run. Naturally, the nonthrift time deposits would be drawn out in the same fashion as the demand deposits, within the limits of maturities and required notice. If the run became so pronounced as to cause the banker to require notice for the withdrawal of savings accounts, the damage would have already been done. Such notice requirement would complete the loss of confidence of the demand depositors and would result in the closing of the bank for the "protection of the depositors."

¹⁰ In 1926 eleven states required some form of segregation of savings deposit assets. These were: California, Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, Oregon, Rhode Island, Texas, and Wyoming. *Federal Reserve Bulletin*, 1926, Volume 12, p. 416.

This result is inevitable unless the amount of demand deposits is small in relation to that of time deposits.

Some support for the view that time deposits are at a disadvantage in relation to demand deposits is found in the fact that, in a group of suspended banks selected for study, demand deposits declined more rapidly than time deposits during the last month preceding suspension.¹¹

In any event, the need is clear for some protection of thrift deposits which represent the accumulations of funds for emergencies and for old age by individuals who for the most part have small incomes. Insofar as possible, they should be protected against losses of their savings and still be given as good an interest return as is compatible with security. Such a desirable result under our system of banking cannot be accomplished without segregation of assets. Commercial banks, whether we like it or not, are compelled to engage in many lending activities which are speculative in nature. From the very nature of things, they cannot avoid risks in making loans. They are in the midst of a dynamic business world, and are constantly being called upon to make decisions on problems whose outcome is uncertain. The existence of a considerable degree of risk is in a way less objectionable to the average commercial depositor than to the thrift depositors. The very hazard to which his deposits are subject becomes unimportant in view of the fact that the existence of such hazards is essential if he in turn is to be able to borrow readily in time of need. Such hazards, fortunately, can be minimized by careful bank management, adequate capital, and a reduction of serious depressions in business. But the thrift depositor is entitled to be free from such hazards, not only because he does not directly benefit from them as the commercial depositor does, but also because he is much less able to assume them.

The most vital reason for desiring segregation of assets behind thrift deposits arises from the fact that only in this fashion can proper security be afforded. The very favorable experience of the mutual savings banks during the years of banking collapse (1921 to 1933) is ample evidence that such security can be had if proper regulations are set up. Perhaps there was some excuse in earlier times, when savings were scarce and the demands for capital to develop new areas were tremendous, for the failure to set up proper facilities to care for the needs of thrift depositors.

¹¹ Cf. "An Analysis of the Timing of Deposit Reductions Prior to Suspension in a Selected Group of Banks," *Federal Reserve Bulletin*, June, 1939, pp. 468-470.

Such an excuse is no longer valid. The fact that segregation of thrift accounts from commercial accounts is not practiced by the Canadian and English banks is, of course, no evidence of its undesirability. Their high-grade management, coupled with the branch banking system, which possesses more inherent stability, undoubtedly gives the thrift depositor considerably more security than American banks without segregation are able to provide. The introduction of a system of insurance of bank deposits by the 1933 and 1935 banking acts obviously reduces the need for segregation among banks which enter the system. However, the fate of the insurance system cannot be considered settled as yet. If it should eventually be terminated or should fail to give adequate protection, the need for segregation would immediately arise once again.

CHAPTER VIII

THE GUARANTY OF BANK DEPOSITS

General problem. Depressions which result in numerous bank failures usually bring agitation for some form of guaranty of bank deposits to protect the depositor from loss. As early as 1829, the state of New York attempted to accomplish this through the Safety Fund System, which was established to guarantee the payment of notes and deposit obligations of the banks of that state. After the panic of 1893, a movement was again started to guarantee deposits, but it failed to achieve any tangible results in the form of legislation. Modern experience with guaranty of deposits followed the panic of 1907. The year 1908 saw the inauguration of a compulsory system of bank deposit guaranty in the state of Oklahoma, followed by guaranty legislation in seven other states; thus eight states tried a system of guaranty in some form or other. The results of these experiments were such as to dampen the enthusiasm of people who had previously advocated the plan. In times of good business and up to the depression beginning in 1920, they worked well. However, bank failures became so numerous during and after this depression that in every case the burden became too great and the systems collapsed.

Standard by which guaranty of deposits must be judged. In discussing the question of guaranty of deposits, one must first ask what is to be attempted and what is to be the standard for measuring the probable results. Such a far-reaching matter as a guaranty of deposits on a nationwide scale can be justified only upon the basis of public good. What, then, is a proper standard for measuring the public good involved? Obviously, it is not to be found merely in the fact that a guaranty system might shift the burden of losses from the backs of bank depositors to someone else. It may be contended that bank depositors as individuals must take their chances of loss along with other lenders and investors. To make a case for a guaranty system, it is nec-

essary to show with reasonable certainty that the economic system would actually reap some net gain over and above the gain it would realize without such guaranty. This, in turn, involves several questions:

1. How may a guaranty system be expected to affect the quality of banking practice and the fundamental strength of the banking system?
2. Will it favorably or unfavorably affect the ability of the banks to serve their communities?
3. Is there sufficient reason, involving public policy, for taking such extraordinary measures to protect bank deposits when creditors in other businesses receive no such protection?
4. Will the direct burden involved in guaranteeing deposits be intolerable to those who will have to assume it?

Guaranty of deposits and quality of bank management. First, will a guaranty system encourage "bad banking"? Will the irresponsible and dishonest banker be more able than before to deceive the public, so that the whole system will degenerate? Will incompetence be increased? Bankers have often gone on record as opposing guaranty of deposits on this ground. It is argued that, with all deposits equally well protected, the public will no longer base its choice of banks on the security afforded by the conservatism of the management, but will patronize the banker who pays the higher interest rate. This in turn would result in competition which would be disastrous to sound banking. Cogent as this reason undoubtedly is, its validity is necessarily based upon the assumption that depositors: (1) are able to choose their bankers intelligently—that they are able to distinguish between a sound and conservatively managed institution and one not so managed; and (2) choose their banking connections solely because of a fancied security of deposits and interest payments. As to the first assumption, there is little evidence that the average depositor is able to make an intelligent choice of banks. It is no secret that the imposing statement of assets and liabilities is quite as successfully used by the unscrupulous and unsound banker as by the better bankers, and that the public in general is entirely incapable of making any use of such statements in determining where to place its deposits. The depositors in the thousands of banks which suspended without reopening since 1921 are eloquent testimony of the helplessness of the average depositor. Moreover, the dangerous competition of banks offering higher interest on deposits has confronted the conserva-

tive banker for many years. Would not these considerations tend to support the contention that the depositor, even with no guaranty, is quite unable to distinguish between the sound and the unsound banks? The common clearing house agreements, limiting the interest paid on deposits, which existed before deposit insurance was started, are further evidence that such a danger exists even in the absence of a guaranty system. In general, it seems fair to conclude that, with a guaranty system, the small depositor will be no more inclined to patronize the unsound banker than before. The larger depositor is probably no more impressed by interest payments than he is by the opportunity to maintain banking connections with institutions which are in a position to give him adequate service, sound financial aid, and guidance. Here the sound banker of established reputation is quite as well off under a system of guaranty as without such a system. He can still reap the rewards of his experience and sound judgment.

To offset possible tendencies toward lax banking induced by a uniform system of guaranty of deposits, there must be more careful and effective supervision of banking practices. Such improvements are needed in any event. Obviously, more care should be used in the issue of charters in prosperous times to prevent "overbanking," and effective means are required for ridding the banking world of individuals who engage in shady and unsound practices. A guaranty system strengthens the hands of the supervising officials in managing difficult cases. Without it the officials are reluctant to take any strong measures against bankers violating the law and the rules of sound banking practice for fear of unfavorable consequences to the credit standing of the remaining banks of the community. Under a system of guaranty this need not be an issue, and the supervising officials may with impunity order the institution closed and its affairs wound up or may compel the withdrawal of offending officials, with resultant savings to both the depositors and the stockholders. Finally, it should be remembered that without a guaranty system the main method which we have had for ridding the community of incompetent bankers is to let them fail. This method is still possible under a guaranty system. The unsound and incompetent banker can fail quite as effectually under a guaranty system as without it. Conversely, the rewards of the sound banker in the form of profits derived from long and successful banking practice will remain. It is fair to conclude that the objection that a guaranty system will ruin the banking sys-

tem by enabling the weak, incompetent, or irresponsible banker to gain at the expense of the sound, conservative, and able banker is less important than it might appear at first consideration.

Effect of guaranty on functioning of banking system. The second question which should be raised is the probable effect of a system of guaranty of deposits on the functioning of the banking system. In answer to this, one need only draw upon the experience of the state attempts to guarantee deposits, where it was found that runs on banks were practically abolished. In view of the frantic efforts of banks to maintain a position of liquidity in times of crisis and under the pressure of runs, and the consequent reluctance of some to make time loans of any kind even on good security, it seems probable that a guaranty of deposits will enable the banks to give better service to the business community.

Does public policy require some form of guaranty protection for deposits? The third question raised is this: Is there any real public advantage in a guaranty system which shifts the risk from the shoulders of the depositors to someone else? Is the shock to a community resulting from the loss of depositors' funds of sufficient importance to justify an attempt to cushion it through some form of insurance? The president of an important New York City bank is reported to have said in opposition to guaranty of deposits: "There is no more reason to guarantee banks that are not run well than there is to guarantee department stores or industrial concerns that are badly run." This remark is a bit misleading, for it implies that a guaranty of bank deposits constitutes a guaranty of the bank. Such an interpretation is inaccurate. There is no attempt to guarantee that the banking venture will turn out profitably for the owners. If the bank is not soundly operated, the stockholders stand to lose with a system of guaranty quite as readily as without. The real question is whether or not the community welfare is so intimately tied up with the continued functioning of its banking system and the safety of its bank deposits that it is desirable to lessen the shock by spreading the loss. Any person who has witnessed the paralysis which seizes a community that has suffered bank failures realizes that this is at least a reasonable question, not to be dismissed by sweeping generalities. The salutary effect on the economic life of the country as a whole from abolishing runs on banks and reducing the shock from bank failures suffered by particular communities can hardly be denied. Although differ-

ent in its application, its immediate results are somewhat similar to those of fire insurance, the essential advantage of which lies in the reduction in the shock by spreading the loss.

Financial burden of guaranty. The fourth question to be faced is a vital one. Will the burden of bank failures be so great as to bring down the good bankers with the bad? This, of course, assumes that the burden is to rest on the bankers themselves. Obviously, the burden of bank failure must be borne by someone, regardless of whether or not there is a guaranty system, a point often overlooked. The experience of the eight states that tried a guaranty system was so unfortunate as to lead many to believe that guaranty of deposits on a sound and equitable basis is impossible. Without exception, these systems worked well in fair weather, but were unable to withstand the load of general depression. The burden placed upon the bankers who remained solvent became intolerable and resulted in the eventual abandonment of the attempt in all states. As a result of this unfortunate experience, it is often assumed that deposit guaranty of any sort is doomed to failure. The collapse of the guaranty systems tried in the eight states can be traced to two main causes: first, inadequate supervision of the system in several instances may be blamed for part of the difficulties; and second, individual states were unable to furnish adequate diversification of risk.

Experience with Guaranty System

The experience with deposit guaranty in the eight states which tried it is summarized in Table 3.

The Economic Policy Commission of the American Bankers Association made a careful study of the experiments with deposit guaranty in the western states. Some of their conclusions are quoted here:¹

These lessons of experience appear to demonstrate conclusively that in practice the guaranty of deposits plan generally tended to induce an unsound expansion in the number of banks and the volume of bank deposits under its supposed protection. This was clearly connected with the indiscriminate popular confidence created toward the banks under the guaranty. Unneeded, undersized and unsound banks, as well as unqualified bank operators, were enabled to command public patronage because of the belief that the banks in the state system were guaranteed by the state and therefore the depositor could not lose.

¹ *The Guaranty of Bank Deposits*, 1933, quoted with the permission of the American Bankers Association.

TABLE 3

EXPERIENCE WITH STATE SYSTEMS OF DEPOSIT GUARANTY*

	<i>Begun</i>	<i>Ended</i>	<i>Assess- ments Paid</i>	<i>Deficit at End</i>	<i>Failure Rate of Guaran- teed Banks</i>	<i>Years</i>	<i>Failure Rate of Na- tional Banks</i>
Oklahoma	1908	1923	\$3,700,000	\$7,500,000	35.6%	(1908-24)	7.6%
Nebraska	1909	1930	17,700,000	20,000,000	38.4	(1921-30)	19.6
Mississippi	1915	1930	.....	5,000,000	16.0	(1920-30)	10.0
South Dakota . .	1916	1927	.....	36,769,000	42.0	(1924-27)	33.5
North Dakota . .	1917	1929	2,000,000	14,000,000	50.0	(1919-29)	35.0
Kansas	1909	1929	2,685,000	7,175,000	5.9	(1922-24)	1.5
Texas	1910	1927	.....	.....	.....	.....	.....
Washington . . .	1917	1929	825,000	1,400,000	.....	.....	.....

* Compiled from the report on *The Guaranty of Bank Deposits* by the Economic Policy Commission of the American Bankers Association.

The rate of bank failures was greater among guaranteed banks than among nonguaranteed banks doing business side by side with them. This produced a higher rate of loss than the guaranty funds, set up by assessments against member banks, were calculated to meet and resulted in the insolvency of the funds, their financial breakdown, and large deficits in unpayable claims in the hands of disappointed depositors.

This inadequacy of the funds occurred even though the assessments on the member banks were oppressively high. Higher assessments, sufficient to sustain the funds, would have driven many banks out of business. In one case, where the method of assessment was such as to permit exactions from sound banks sufficient to meet the claims against the fund in full, the impairment of sound banks was so great as to cause serious public alarm and to force abandonment of the plan.

The apparently unsurmountable actuarial difficulty in the guaranty plan appears to be the impossibility of placing it on the basis of selected risks. For one thing, the causes leading to many bank failures arose from general and wholly unpredictable economic conditions far broader than the field of banking experience itself. Again, either unrestrictive laws as to chartering new banks or lax administration of the laws admitted to the plan a large volume of banking of a character that created abnormally high volumes of claims upon it. Even where no great increase was allowed in the number of banks, and therefore a certain degree of numerical selection of risks prevailed, internal deterioration of banking under the influence of the plan tended to negative this selectivity. From such causes, therefore, weaker banking and higher mortality among the guaranteed banks destroyed the expected balance between the risks and the reserves created by the assessment.

As a matter of unbiased history, therefore, the guaranty of deposits plan proved fallacious and unworkable, whether from the point of view of banking practice, actuarial science as applied to the insurability of bank deposits, the effects on the human element within banking, the effects on the public attitude toward banks, the attitude of public bank supervisory officers in respect to their duties and administrative functions, or the fortifying of the banking structure to withstand adverse economic conditions.

These historical experiences show that the guaranty plan is inherently fallacious and based on erroneous premises and assumptions. It has proved to be one of those plausible, but deceptive, human plans that in actual application only serve to render worse the very evils they seek to cure.

The Present Deposit Insurance System

The first attempt to develop a nationwide system of insurance of bank deposits was undertaken in connection with the Banking Act of 1933. Congress then amended the Federal Reserve Act by adding Section 12 B, which provided for the insurance of deposits of all Federal reserve members and qualifying nonmember banks. As originally enacted, the law provided a temporary plan of insurance which was to be in force from January 1, 1934, until July 1, 1934, at which time a permanent plan was to go into operation. The temporary plan was designed to bridge the gap until the permanent plan could be started.

Temporary plan. The temporary plan provided for the insurance of the deposits of all member banks licensed to operate by the Secretary of the Treasury, and the deposits of nonmember state banks whose solvency had been certified to the Federal Deposit Insurance Corporation by state supervisory authorities. Each insured bank was required to pay into a central fund an amount equal to $\frac{1}{4}$ of 1 per cent of deposits eligible for insurance, with an equal amount, in addition, subject to call. The maximum insurance under this temporary plan was \$2,500 for any individual depositor. Under this temporary plan all member banks and most nonmember banks able to qualify were insured.

Original permanent plan. The permanent insurance which was to have gone into effect on July 1, 1934, would have changed the basis for deposit insurance from a flat \$2,500 maximum fully covered, as under the temporary plan, to the following sliding-scale formula:

100% coverage on all deposits not exceeding \$10,000

75% coverage on excess of deposits above \$10,000 up to \$50,000

50% coverage on any excess of deposits above \$50,000

Moreover, each insured bank was to subscribe to stock in the Federal Deposit Insurance Corporation to an amount equal to $\frac{1}{2}$ of 1 per cent of its total deposit liabilities. One half of this subscription was to be paid in full, and the other half was to be subject to call. Whenever the funds of the Federal Deposit Insurance Corporation became depleted, the insured banks were to be assessed at the rate of $\frac{1}{4}$ of 1 per cent of their total deposits.

The opposition to the permanent plan became so strong that its inauguration was postponed until a more satisfactory law could be formulated. The objections were: (1) it unnecessarily increased the volume of deposits covered by insurance (96.5 per cent of the total number of accounts in member banks were entirely covered by the \$2,500 limit of the temporary plan); (2) the assessment on the basis of total deposits was unfair to the larger banks, which had mainly large accounts only partially insured; and (3) the banks were subject to unlimited assessments to replenish the fund. A new law approved August 23, 1935, modified the old permanent plan to meet some of the criticisms. During the intervening period (July 1, 1934 to August 23, 1935), the temporary insurance plan continued to operate in the same manner as during the first six months of its existence, except that the insurance coverage was raised from \$2,500 to \$5,000.

Present deposit insurance. The new permanent plan, effective August 23, 1935, provided for the same basic organization as the original plan. The Federal Deposit Insurance Corporation is retained, with somewhat increased authority. Its funds are derived from three sources: (1) the United States Treasury subscribed to \$150,000,000 in capital stock; (2) each Federal reserve bank was required to subscribe to shares of stock equal to one half of its surplus account as of January 1, 1934 (this amounted to \$139,299,556.99); and (3) each insured bank contributes annually $\frac{1}{2}$ of 1 per cent of its average deposits.* The assessment is to be paid semiannually and is to be computed by multiplying the rate ($\frac{1}{24}$ of 1 per cent semiannually) by the assessment base, which is the average daily difference between total deposits and total uncollected items credited subject to final payment. For this purpose deposits payable only at an office outside the United States or any of its dependencies are excluded. At the option of the bank, any deposits payable only at a branch located in one of the dependencies of the United States may be excluded from the insurance provisions and the assessment base.

The Federal Deposit Insurance Corporation is under the management of a board of directors consisting of the Comptroller of the Currency and two others appointed by the President. The corporation is empowered to appoint examiners with power to examine all insured nonmember state banks, any national banks with the written consent of the Comptroller, and any state member bank with written consent of the Board of Governors of the Federal Reserve System. The corporation shall be appointed

* Until six months after the end of the war deposits subject to assessment need not include balances to the credit of the United States Treasury arising solely from subscriptions to Government securities. (Act of April 13, 1943.)

receiver of all failed national banks and shall *accept* appointment as receiver of failed insured state banks when such receivership is tendered by state supervisory authorities under the state law.

As soon as possible after failure of an insured bank, the corporation shall make available to each depositor the amount of the insured deposits, either by transferring it to another insured bank in the same community, by depositing it in a new national bank with a temporary organization if public interest so requires, or by direct payment to depositors. If a new bank is organized by the corporation, it may accept deposits, to be held in cash or the equivalent, or to be invested in government securities, pending sale of stock and completion of organization or the sale of its assets and transfer of its liabilities to another insured bank.

The corporation may issue obligations, which are eligible for purchase by the Secretary of the Treasury at his discretion, in an amount not more than three times the amount received in the sale of its capital stock and the assessments on insured banks for the year 1936. The corporation is required to prohibit the payment of interest on demand deposits and to limit the interest paid on time and savings deposits of insured nonmember banks. It is also required to prohibit the payment of time deposits of such banks before maturity except under regulations of the same sort as are set up by the Board of Governors for Federal reserve members.

Any nonmember insured bank may terminate its insured status upon ninety days' notice. Member banks are required to be insured. Whenever an insured bank is guilty of continued unsound practices or violation of law, the Federal Deposit Insurance Corporation shall notify the supervisory authorities concerned regarding such practices or violations. If conditions are not improved within one hundred twenty days (or less, as determined by the authorities concerned), the corporation may give the bank at least thirty days' notice of intent to terminate the insured status of the bank and set a time for hearing of the case. If the corporation finds the charges substantiated, it may order the termination of the bank's insured status, publish notice of the same, and require the bank to give notice to all depositors to that effect. After the termination of insured status, existing deposits shall continue to be insured for a period of two years, and the bank is liable for the regular insurance assessments. New deposits or additions to old deposits, however, are not insured. Since national banks and Federal reserve members cannot be uninsured, national banks under the circumstances are put into the

hands of a receiver, and state member banks must give up membership in the Federal Reserve System.

As the funds of the corporation accumulate, they may be invested in obligations of the United States or in obligations guaranteed by the United States, or temporarily deposited with the Treasurer of the United States or in any Federal reserve bank.

The corporation is subrogated to the rights of the insured depositors of the closed banks to the extent that it is entitled to receive the same dividends from the proceeds of the assets and recoveries on account of stockholders' liability as would have been payable to the depositor on a claim for the insured deposit. The depositor retains his claim for any uninsured portion of his deposit. The corporation, therefore, is in the position only of a general rather than a preferred creditor.

Not only is the corporation to act as receiver of all failed national banks and, where permitted, of failed insured state banks, but it may also purchase or make loans upon the assets of failed insured banks to facilitate the liquidation process.

Insurance of mutual savings banks. Owing to the dissatisfaction of mutual savings banks with the original plan to insure their deposits on the same basis as other banks, the present law provides that the Federal Deposit Insurance Corporation, at its discretion, may establish a fund for the sole purpose of providing insurance for mutuals. Should this be done, a lower assessment rate for such banks may be established. Although the return of mutual savings banks in New York to the Federal deposit insurance system in 1943 has led to some pressure for the establishment of the separate fund, no action has been taken in this direction. Amendments to the law in 1934 first provided for a separate mutual savings bank fund. Early in 1934 the State of New York passed a law permitting 75 or more mutual savings banks with not less than 50 per cent of the savings bank deposits of the state to set up a mutual fund for the insurance of deposits. As a result, 135 of the 138 mutual savings banks of the state joined the mutual deposit system.² Massachusetts likewise had a similar arrangement. During the year 1934, 146 mutual savings banks carrying over \$5,300,000,000 in deposits withdrew from the Federal insurance system. At the end of the year, 68 mutual savings banks with \$1,045,000,000 in deposits remained in the Federal insurance system as compared with 506 mutuals

² Benson, Philip A., "Mutual Savings Insurance Funds," *American Bankers Association Journal*, August, 1934.

having \$8,690,000,000 in deposits uninsured in the Federal fund. The special funds for mutuals of the states of New York and Massachusetts furnished not only deposit insurance service, but rediscount facilities for their members as well. In Massachusetts, the Mutual Savings Central Fund was established in 1932 to provide discount facilities, and its powers were extended in February, 1934, to include full insurance coverage for deposits. Membership is compulsory. Table 4 shows the insured position of mutual savings banks at the end of 1934. In September 1943, the Mutual Savings Bank fund of New York was abolished and the New York mutuals again entered the Federal deposit insurance system.

TABLE 4

MUTUAL SAVINGS BANKS, DECEMBER 31, 1934*

	<i>Number of Banks</i>	<i>Total Deposits (In Millions of Dollars)</i>
Insured by the Fed. Deposit Insurance Corp.	68	1,045
Members of the Savings Bank Trust Co. of New York	135	4,648
Members of the Mutual Savings Central Fund, Inc., of Mass.	193	2,052
All other mutual savings banks	178	1,990
Total	574	9,735

* *Annual Report of the Federal Deposit Insurance Corporation, 1934, p. 66.*

Federal reserve membership for insured banks. All banks which are members of the Federal Reserve System must be insured. A large fraction of the insured banks, about one half, in fact, are therefore member banks. There is no requirement, however, that insured banks must become members. As originally passed, the deposit insurance law provided that all insured banks must ultimately join the Federal Reserve System, but the opposition of nonmember banks led to the abandonment of this requirement.

Type of deposits insured. An "insured deposit" under the present law is defined as "the net amount due to any deposit or deposits in an insured bank (after deducting offsets) less any part thereof which is in excess of \$5,000." For the purpose of determining the amount owed any depositor, all deposits in the bank for his benefit, either in his own name or in the name of others, are combined.

Trust funds held in cash, awaiting investment or disposal, are considered separately from other deposits regardless of the beneficiary, and each separate trust fund is insured up to \$5,000.

Probable adequacy of insurance fund. The present insurance fund is to be maintained solely out of the accumulations resulting from an assessment of $\frac{1}{12}$ of 1 per cent of the total deposits of the insured banks. Thus the criticism that in times of heavy failures sound banks will be dragged down by the burden of failures is avoided, since no provision is made for extra assessments. To care for the contingency of concentrated failures which might exhaust the fund, the corporation is granted the borrowing power described above. Within the limits of this borrowing power, the Federal treasury is behind the fund, since it may purchase the corporation's obligations.

A question naturally arises as to the adequacy of the annual assessments to meet the probable future costs of deposit insurance. It has been estimated that if a collection of an annual premium or assessment of $\frac{1}{10}$ of 1 per cent against national banks had been made from 1863 down to the beginning of 1933, these receipts, plus the unused balances accumulating at 3 per cent interest, would have covered all of the losses from failed national banks, and there would have been a surplus of \$154,000,000 at the beginning of 1933.³ The *Annual Report of the Federal Deposit Insurance Corporation* for 1934 gives an estimate of the annual losses for the period 1865 to 1934 per \$100 of deposits in active banks as follows:⁴

	Total Losses	Losses on Deposits Insurable under the \$5,000 Limitation
National banks	\$227	\$149
State banks	412	328
All banks	324	244

If these figures are correct, one may seriously question the adequacy of an assessment of $\frac{1}{12}$ of 1 per cent to insure the deposits of all banks unless very definite reforms can be instituted to improve banking practices and reduce failure losses.

The experience of the FDIC. During the first seven years of its operation (1934-1940), the FDIC was able to meet all the losses on failed banks, pay its expenses of operation, and accumulate a substantial surplus. The results of its operations appear in Table 5.

³ Taggart, J. H., and Jennings, L. D., "Insurance of Bank Deposits," *Journal of Political Economy*, August, 1934, p. 508.

⁴ P. 90.

TABLE 5

INCOME AND EXPENDITURES OF THE FEDERAL DEPOSIT INSURANCE CORPORATION
FOR THE YEARS 1934-1940

Assessments paid by insured banks	\$211,105,027
Interest earned and profits on sale of securities	<u>63,401,243</u>
Total income	\$274,506,270
Total disbursements to depositors of failed banks and to assist in bank mergers	\$228,233,820
Estimated recoveries	<u>182,457,406</u>
Net losses and expenses of deposit insurance	\$ 45,776,414
Administrative expense and other charges	<u>22,044,582</u>
Total expenses of operation	<u>\$ 67,820,996</u>
Excess of income over total operating expense carried to surplus	\$206,685,274

STATEMENT OF ASSETS AND LIABILITIES OF THE FEDERAL DEPOSIT
INSURANCE CORPORATION, DECEMBER 31, 1940

<i>Assets</i>		<i>Liabilities</i>	
Cash	\$20,460,790	Capital stock	\$289,299,556
U. S. bonds ..	<u>384,513,856</u>	Surplus	<u>206,685,274</u>
Assets acquired through suspensions and mergers		Other liabilities	<u>1,223,862</u>
less reserves for losses..	92,172,173	Total	<u>\$497,208,692</u>
Miscellaneous assets	<u>61,873</u>		
Total assets	<u>\$497,208,692</u>		

During the first seven years of the Federal Deposit Insurance Corporation's operations, 358 insured banks were closed. Three of these were subsequently reopened or taken over by other insured banks. The remaining 355, having 1,133,379 depositors and total deposits of \$438,625,000, were liquidated or were merged with the aid of loans from the corporation. Of the total deposits in these banks, 97.8 per cent were made available promptly and without loss to the depositors.

On December 31, 1940, 13,442 commercial banks and 53 mutual savings banks were insured. Of the commercial banks, 5,144 were national, 1,342 were state member, and 6,956 were nonmember banks. At the same time, there were about 900 noninsured commercial banks, whose deposits were between 2 and 3 per cent of the total deposits of all commercial banks. In September, 1938, it was reported that 98.4 per cent of the accounts in insured commercial banks were fully insured under the \$5,000 limitation. The total deposits of these banks, how-

ever, amounted to 48 billion dollars, of which 21.7 billion dollars were covered by insurance.

In spite of the general acceptance on the part of bankers of the principle of deposit insurance as embodied in the present law, there have been some objections to particular details. For example, there is a feeling among the larger bankers that they are compelled to carry an inequitable share of the load of deposit insurance. Insured banks with deposits of over \$50,000,000 number 120, but they carry approximately 55 per cent of the total deposits of insured banks, and are therefore paying 55 per cent of the premiums which go to maintain the FDIC. Yet these banks receive insurance coverage upon only about 26 per cent of their deposits. Although there is some truth to the contention that the larger banks are carrying more than their share of the financial burden, it by no means follows that they should be relieved of it. Because of their superior earning power they are undoubtedly in a better position to bear this burden than many of the smaller banks. At the same time, they obtain much indirect benefit from the insurance of the deposits of the country banks with whom they deal and in whose continued solvency they have a very real interest.

A second objection is beginning to be raised in respect to the size of the semiannual premium of $\frac{1}{24}$ of 1 per cent. It is pointed out that the assessments collected from the insured banks have so far been $4\frac{1}{2}$ times the losses and expenses. Therefore, some bankers are beginning to ask for a reduction in the premium paid to the FDIC by insured banks. It should be stated unequivocally, however, that such suggestions do not as yet merit any serious attention. If there is anything which the history of bank failures and losses teaches us, it is that without a vastly improved long-run record in American bank failures, the present premium or assessment of $\frac{1}{12}$ of 1 per cent annually cannot be expected to meet losses during years of acute depression unless a very sizable backlog is accumulated during the more favorable years.

Attempts of FDIC to strengthen insured banks. The ultimate success of deposit insurance rests upon the soundness of the insured banks. That excessive failures will inevitably result in the undoing of the whole project is amply demonstrated by the experiences of the individual states which tried deposit insurance. Care must be taken that bankers shall not rely upon the insurance rather than upon sound management methods to command public confidence and attract business. Such a loosely

knit banking structure as ours can hardly be relied upon to follow conservative and sound practices without fairly rigorous supervision. Under deposit insurance this supervision has been considerably strengthened.

The relatively poor showing of state banks belonging to the Federal Reserve System during the troubled times between 1929 and 1933 indicated clearly that membership in the Federal Reserve System alone was no guaranty of good management. Although the Board of Governors of the Federal Reserve System (called the Federal Reserve Board before 1936) had authority to examine member banks, the exercise of this right involved duplication of the efforts of the Comptroller of the Currency (who has supervision over national banks) or the state bank examiners. Consequently the Federal reserve authorities normally accepted the report of the state or national bank examiners without any independent examination of their own. Since 1933, however, the Federal reserve authorities have adopted a policy of examining all state-chartered member banks at least once each year. The Federal Deposit Insurance Corporation has specific power to examine insured nonmember banks; to examine national banks with the consent of the Comptroller of the Currency; and to scrutinize state member banks with the consent of the Board of Governors. It has, therefore, adopted the practice of making annual examinations of each nonmember insured bank, with additional examinations when conditions seem to warrant them. Further, it has authority to require all insured member banks to submit reports, and it has access to any reports to and results of examinations by the Comptroller and the Federal reserve banks. The Federal Deposit Insurance Corporation is therefore in a good position to detect and act upon poor management policies of the nonmember state banks. Its control over national and state member banks is still rather ill-defined and has led to proposals that power of examination and supervision of all insured banks, member state and national banks, as well as nonmember banks, should be concentrated in the hands of the Federal Deposit Insurance Corporation.

As a means of preventing the admission of unsound banks to insured status, the Federal Deposit Insurance Corporation examines all applicants. The chartering of new banks has presented something of a problem. It has been generally agreed that a serious fault in the American banking system is to be found in the chartering of banks in locations already adequately supplied with banking facilities, a practice leading to a tendency

toward cutthroat competition and unsound banking practices. In an attempt to forestall a repetition of excess chartering, the Federal Deposit Insurance Corporation has endeavored to persuade state authorities not to grant new charters until it has examined each local situation and has agreed to admit a new bank to the deposit insurance system.

Since many banks were admitted to membership in the insurance system with little if any real "sound capital," there has been a definite effort to increase the stockholders' equity in insured banks. The rule has been laid down that the "net sound capital" of all insured banks should equal at least 10 per cent of a bank's deposits.⁵ Finally, as a means of reducing the number of weak banks unable to meet necessary standards, the corporation may exercise its right to make loans secured by the assets of insured banks in order: (1) to reduce or avert an impending loss; and (2) to facilitate a merger or consolidation of the borrowing insured bank with another insured bank, or the sale of its assets and assumption of its liabilities by another insured bank. This enables the corporation to take inevitable losses during times of prosperity and also increases the stability of the banking system by eliminating weak banks doomed to eventual failure.

⁵ *Annual Report of the Federal Deposit Insurance Corporation*, 1935, p. 28.

CHAPTER IX

COLLECTION OF CHECKS

IF ALL deposits were payable only to the depositor himself, interbank relationships would be simple. Instead, demand deposits are paid upon written negotiable orders or checks. It is the custom in this country to make payments by drawing these orders or checks payable to the person to receive the funds and to deliver these checks in lieu of cash. The receiver of a check may be a depositor in the bank on which it is drawn, in which case only a bookkeeping entry is required to complete the payment. The deposit of the drawer of the check is reduced and that of the payee is increased by the amount of the check. A large proportion of checks drawn, however, are transferred to persons who are not customers of the drawee bank. Some go to individuals with no banking connections, who present the checks at the paying teller's window for payment, or who transfer the checks to local merchants, who in turn must present the checks for payment. Thus many checks drawn against a bank's demand deposits fall into the hands of depositors of other banks. As a service to depositors, a bank normally undertakes to collect checks drawn upon other banks. This service may be free or a charge may be made. In any event, the bank credits its depositors' accounts with the amount of checks deposited and collects the checks from the drawee banks.

This check collection performed by banks for their customers has two important consequences. First, it makes possible the widespread use of checks as a means of payment. Perhaps 90 per cent or more of all the money payments in the United States are made by checks against demand deposits. Without this development, the usefulness of demand deposit banks would be greatly reduced. A second consequence of check collection is that it necessitates the existence of an elaborate set of devices whose main function is to facilitate the collection process. These devices fall into two general classes: (1) the local clearing houses

for collecting checks on local banks; and (2) the collection system for handling the checks drawn on out-of-town banks. Each of these will be examined in turn.

The Clearing House

The use of the clearing house for exchanging checks arose out of the obvious convenience of such a practice. Without a special meeting place where the representatives of the banks could assemble, it would have been necessary for messengers from each bank to make separate calls on other banks for the purpose of presenting and collecting checks received from depositors and making settlements therefor. This troublesome procedure is avoided by the use of the clearing house.

The responsibility for smooth operation of the clearing function cannot be left to mere chance. Hence banks wishing to clear checks through the clearing house form an organization called a *clearing house association*. Through this association, rules and regulations are set up for the control of the clearing functions. A uniform procedure is worked out so that the clearing of checks goes on smoothly. Messengers must arrive with checks at a stated time. The checks for clearing must be properly sorted and recorded. Settlements must be made in certain approved ways. Moreover, the banks find the clearing house association a convenient device for introducing co-operative action in matters other than the mere clearing of checks. For example, competitive practices are frequently regulated and standardized through the association. It follows, therefore, that some form of administrative control is necessary. This control is normally centered in the clearing house committee, made up of influential bankers elected by the representatives of the members of the association. This committee formulates the regulations governing the various operations of the clearing house, while the responsibility for their execution is usually vested in a manager. The voluntary association rather than the corporate form of organization is most favored, as it gives greater elasticity of function as well as more effective control over the members than would be afforded by the more rigid corporate form.

The clearing mechanism. The clearing operation is itself simple in principle. Before being sent to the clearing house, each check must be inspected to make certain that it is properly indorsed by the payee and that it appears to be regular in every way. Further, it is indorsed with a rubber stamp bearing the date, name, clearing house number of the clearing bank, and some

notation to the effect that payment is received through the clearing house. The checks are then sorted according to the bank on which they are drawn, and the amounts are totaled and recorded on a slip which is attached to each package of checks.

At the time appointed for clearing, the messengers from each bank go to the clearing house and exchange the packages of checks so that each messenger comes into possession of the checks drawn on his bank. On a specially prepared statement blank containing the names of the other clearing banks, the messenger records the amount of the checks delivered to and received from each of the other banks and computes the total of checks brought to and received from the clearing house. If the amount brought to the clearing house exceeds the amount received, the bank has a favorable balance at the clearing house, and the net excess will be paid to it. On the other hand, if the checks received from the clearing house exceed those brought, the bank is a net debtor and must pay the difference to the clearing house.

In some cities the clearing of checks is formally carried out more than once a day. Further, large banks frequently are able to expedite their bookkeeping by informally exchanging checks drawn on each other at more frequent intervals. In such a case the drawee bank gives the presenting bank a receipt for the total amount of checks received, and the receipt is put through the clearing house at the regular time in the same fashion as a check. In larger cities, small banks not wishing to assume the responsibilities of membership or unable to qualify arrange to have their checks cleared through a member bank.

Methods of settlement. One principle of settlement prevails. The debtor banks pay only the net amount of their debts to the clearing house. The creditor banks receive in turn only the net amount due them. Thus the settlement is made with a minimum amount of trouble.

To accomplish this the clearing house manager acts as an intermediary. He may draw checks against the debtor banks in favor of the creditor banks. These checks are presented over the counter of the debtor bank and in turn may be paid in a number of ways. In the past, clearing houses made settlement by the use of clearing house certificates. In such a case each member of the clearing house deposited with the manager a quantity of lawful money, usually gold or gold certificates, and received in return clearing house certificates in convenient denominations and payable only to a member of the clearing house. These certificates made it possible to make settlements conveniently and

without risk of loss. More commonly, settlements today are made with drafts drawn on city correspondents or on the Federal reserve bank of the district.

Other functions of the clearing house. Bankers find that collective action is desirable for three distinct reasons: (1) excessive competition is likely to lead to practices which impair a banker's profits; (2) bank failures must be prevented as far as possible if banks are to be spared the consequences of loss of public confidence; and (3) when difficulties do arise, in spite of whatever protective measures are taken, mutual aid is needed to withstand the shock.

The clearing house association forms a convenient means for accomplishing the needed collective action. To prevent undesirable competition, the clearing house association lays down for its members rules which may cover a variety of practices. It may, for example, fix the maximum rate of interest members may pay on deposits, the uniform charge for collecting out-of-town checks, or the required minimum balances and service charges. Depositors frequently resent such collective action taken by banks on the ground that it is monopolistic in its effects. A fair appraisal of the results, however, must take cognizance of the very positive public benefits. Cutthroat competition among banks is almost certain to bring trouble. The bank which pays excessive interest rates or furnishes too many free services is a source of danger to the whole business community. The search for profits to offset the abnormal cost of such competition ultimately leads to the making of speculative loans and investments, with disastrous results to both the bank and the public alike.

The second general reason for collective action through the clearing house is found in the necessity for preventing failures among banks. Clearing house associations, therefore, often require regular reports of the condition of member banks. In some cases the clearing house goes so far as to establish a system of examination for all members. This practice began in Chicago in 1906 as a consequence of the failure of three banks controlled by John Walsh, which had been badly mismanaged. The Chicago Clearing House Association had been warned by the state and national bank supervisors that the banks were to be closed immediately. To allow these banks to fail outright would have been a dangerous blow to the local credit situation, which was already overextended. The members of the clearing house, therefore, agreed to guarantee the deposits of the Walsh banks and to take them over for liquidation. This was a costly under-

taking, for at one time as much as \$7,000,000 was advanced by the banks, although the ultimate loss after fifteen years of liquidation was reduced to about half that amount. Somewhat saddened by the experience in offsetting the results of the Walsh failures, the members of the Chicago Clearing House determined to prevent, as far as possible, recurrence of such an episode. An expert examiner, with several assistants, was employed and given authority to examine all the clearing banks. For many years, in fact up to the difficulties of 1930 to 1933, it was the boast of the Chicago Clearing House Association that no depositor had lost in the failure of any banks which were clearing house members. True, some few member banks had failed, but their obligations had been assumed and their assets liquidated without loss either to depositors or to the clearing house banks.

The advantages of a competent form of clearing house examination are several. First, the clearing house examiner has a more intimate knowledge of the affairs of borrowers and the whole banking system of the city than have either the state or the national examiners, who get only a partial view of the situation. Further, the authority of clearing house examiners is more effective than that of state and national examiners. The latter necessarily must confine their criticisms largely to violations of banking law, since it is only such violations which are within their power to correct. Moreover, before 1933 examiners had no weapon for compelling compliance, save the threat of closing up the bank altogether. The clearing house examiners' criticisms, however, may be laid before the clearing house committee and be made the basis for expulsion from the clearing house association. To be denied clearing privileges or to be expelled from membership is a serious matter, and such a threat is likely to bring the erring banker into line.

Another regulatory activity of clearing house associations has to do with the setting up of banking standards such as minimum reserve requirements, capital requirements, limitations on real estate loans, and investment of capital in fixed assets. Such rules may and do exist in the absence of a system of examination.

In spite of any precautions that may be taken, conditions may arise requiring more than mere prevention. Banks may become involved in spite of careful supervision and endanger the whole bank structure. Hence, whether or not clearing house examinations are used, it is sometimes necessary that local banks take steps to prevent loss by depositors. At such times clearing house associations may collectively guarantee the deposits of the

failing bank and employ a liquidating agent to minimize the loss to themselves by avoiding costly receiverships. Or, they may "sell" the business of failing banks to some member of the association which undertakes to pay a fixed sum for the goodwill and probable value of the deposits. This bank then takes over the liabilities under a guaranty from the association and acts as liquidating agent.

Before the Federal reserve banks were created, with power to assist banks by lending them cash, the clearing house associations sometimes found it desirable to assist members that were in need by permitting them to meet their clearing house balances with clearing house loan certificates. These interest-bearing certificates were secured by the deposit of approved securities with the clearing house committee by the bank for whose benefit they were issued and were the obligation of the association as well as of the individual bank resorting to their use. By means of such certificates banks were able to carry on the local clearing of checks in spite of panic conditions which would otherwise have depleted some banks' cash to such an extent as to impair their legally required reserves.

Collection of Out-of-Town Checks

Two methods are available for presenting and collecting checks drawn on out-of-town banks. The first and the one most commonly used is that provided by the Federal reserve banks; the second is the resort to correspondent banks in other cities. We shall examine first the Federal reserve collection system.

Federal reserve collection system. The Board of Governors, under the authority of the Federal Reserve Act, arranges to have each Federal reserve bank collect checks for such of its member banks as desire to avail themselves of its privileges and for such nonmember state banks and trust companies as may maintain adequate balances with the reserve banks.¹ Such nonmember state banks and trust companies are called nonmember clearing banks. Only checks drawn on "par banks" (banks which agree to remit the full face value of all checks presented through the mail) can be collected through the Federal reserve banks.

The system of check collection begins with the bank that has received out-of-town checks from its customers. Such checks

¹ *Regulation J*, Series of 1939.

must be prepared for collection in somewhat the same manner as local checks intended for the clearing house. They must be inspected for the indorsement of the payee and for any evidence of irregularity. They must then be stamped with the bank's indorsement. This is in the form of a special indorsement calling for payment to "any bank or banker," thus minimizing the danger of loss in case the checks should be stolen.

This work of preparing the checks for collection is done by the "transit department" in the larger, departmentalized banks. Proper record must be made of each check for the bank's own use, and an identifying list is prepared to accompany the checks when they are sent in for collection.

If the collecting bank is a member, or a nonmember clearing bank, the checks are sent next to the Federal reserve bank, where the sending bank receives deferred credit. The reserve bank in turn indorses the checks and starts the process of collecting them from the drawee banks. Four possibilities arise at this time:

1. If the checks are drawn on banks in the city in which the reserve bank itself is located, they will be presented directly to the drawee bank or through the clearing house of which the reserve bank is a member.

2. If the checks are drawn on member or nonmember clearing banks in other towns or cities of this district, the reserve bank will mail the checks directly to the drawee bank and request a remittance. After the drawee bank has had an opportunity to inspect the checks for genuineness, it will remit the amount to the reserve bank. In doing so it has a choice of: (a) drawing a draft on its reserve account with the reserve bank; (b) sending a draft on other banks located in the Federal reserve city; (c) shipping currency at the expense of the reserve bank; or (d) making any other form of payment acceptable to the collecting reserve bank. If a remittance is not promptly made, the amount will be deducted from the member's reserve account in any event; promptness in remitting is thus desirable.

3. If the checks are drawn on nonmember banks outside the Federal reserve city, the reserve bank may send them directly to the nonmember banks and request a remittance, or present them through a near-by member bank, which collects and remits.

4. If the checks are drawn on a bank in another Federal reserve district, the collecting reserve bank sends the check to the reserve bank of the other district. The check then proceeds through the ordinary collection channels of that district, and

HEAD OFFICE

FEDERAL RESERVE BANK OF CHICAGO

TIME SCHEDULE

Effective September 1, 1939

CHECKS ON FEDERAL RESERVE BANK OF CHICAGO AND OFFICERS' CHECKS OF OTHER FEDERAL RESERVE BANKS will be received for IMMEDIATE CREDIT until 2 p. m. (Saturday 12 noon) when listed in a separate deposit which does not include other items.

CHECKS DRAWN ON CHICAGO BANKS will be received for IMMEDIATE CREDIT until 9:30 a. m. (Saturday 9 a. m.).

GOVERNMENT WARRANTS AND CHECKS DRAWN ON THE TREASURER OF THE UNITED STATES will be received for IMMEDIATE CREDIT until 12 noon (Saturday 11 a. m.) when listed in a separate deposit which does not include other items. After said hours special deposits consisting only of items \$500 and over will be received until 2 p. m. (Saturday 1 p. m.).

CHECKS DRAWN ON OUT-OF-TOWN BANKS will be received for DEFERRED CREDIT, in accordance with the schedule below, until 6 p. m. (Saturday 5 p. m.).

—States—
Number of *business*
days deferred

—Cities—
Number of *calendar*
days deferred

Illinois
Indiana
Iowa } 2*
Michigan
Wisconsin

Cincinnati
Cleveland
Detroit
Kansas City
Louisville
Minneapolis
Nashville
Omaha
Pittsburgh
St. Louis
St. Paul

Atlanta
Baltimore
Birmingham
Boston
Buffalo
Charlotte
Dallas
Denver
Houston
Jacksonville
Little Rock
Memphis
New Orleans
New York
Oklahoma City
Philadelphia
Richmond
San Antonio

El Paso
Helena
Los Angeles
Portland
Salt Lake City
San Francisco
Seattle

All Others: 3*

*Should earlier availability be desired on Federal Reserve and branch bank cities, it can be obtained by preparing a separate letter for each of the three groups shown in the adjoining columns.

Checks drawn on banks not located in a Federal Reserve city but bearing upon their face a notation that they are payable at or receivable for immediate availability in a Federal Reserve city will be accepted on the same basis as checks drawn on banks located in that city.

settlement is made between the reserve banks through the Interdistrict Settlement Fund, which will be described later.

As we observed at the beginning, the original bank sending checks for collection to its Federal reserve bank receives deferred credit only. After collection has been completed by the reserve bank, the proceeds of the checks are credited to the member bank's reserve account. In order that member banks may know when checks sent to the reserve bank for collection will be fully available for use, each Federal reserve bank has set up a time schedule showing the number of days which must elapse before checks drawn upon banks located in different areas will be available for full reserve credit. The schedule prepared by the Federal Reserve Bank of Chicago is shown on page 116. As a result of action of the Board of Governors of the Federal Reserve System, the maximum time which may elapse before full credit is given is now limited to three days.

Member banks are not required to utilize the collection facilities of their reserve banks. They may and often do send out-of-town checks to their city correspondents, who in turn send them to the Federal reserve bank for collection or collect directly from the drawee bank.

Use of Interdistrict Settlement Fund.² Checks to be collected in other districts are forwarded by the reserve bank which first receives them to the reserve bank of the district in which the checks are payable. This bank then presents the checks in the usual manner to the banks on which they are drawn, receives back remittance therefor, and in turn remits the collected funds to the first reserve bank from which the checks were received. This remittance between reserve banks is accomplished by daily telegraphic communication from each reserve bank with the Board of Governors of the Federal Reserve System at Washington, D. C., which holds the Interdistrict Settlement Fund. Each Federal reserve bank has book credit against the fund for its share. At the end of each business day, each reserve bank reports to the Board of Governors the funds collected by it for each other reserve bank. The board thereupon determines the net changes in each reserve bank's claims to the Interdistrict Settlement Fund and notifies the several banks the following morning of the size of their shares of the fund. In 1940 the fund amounted to \$11,000,000,000. During the year 1939, \$103,000,000,000 of items were cleared through the fund.

² Formerly called the Gold Settlement Fund.

In some instances a saving of time can be accomplished by the introduction of short cuts in the routing of checks for collection. Intradistrict checks may be cleared through Federal reserve bank branches. Also, under special arrangements with the reserve bank, one member may send checks drawn on another member directly to the drawee bank and notify the reserve bank, which credits the collecting bank's reserve account upon receipt of remittance from the drawee bank. Interdistrict collection time may also be reduced by special agreements which authorize banks to route checks directly to the reserve bank of another district for the credit of the reserve bank of the sending bank.

Collection of checks without use of Federal reserve bank facilities. Although the Federal reserve banks furnish excellent facilities for the collection of checks for member and nonmember clearing banks, a substantial number of checks are collected without the use of the reserve banks. As was observed before, member banks frequently prefer, for one reason or another, to collect through city correspondents rather than through the reserve bank. For example, a member bank in Lafayette, Indiana, might wish to send its checks drawn on Indianapolis or the surrounding area to its Indianapolis correspondent, which would be in a position to make collection through the Indianapolis clearing house and grant immediate credit, whereas if they were sent to the Federal Reserve Bank of Chicago for collection, the checks would not be added to the reserve credit until two days after receipt of the checks by the Chicago bank. Thus, regardless of the use which the Lafayette bank wished to make of its funds, they would become available two days sooner by collecting through Indianapolis. Frequently member banks find it more convenient to collect checks drawn on banks located near the reserve bank through correspondents in the reserve city. Since such correspondents may grant immediate credit, it might appear that the member bank could shift the burden of carrying "deferred credit" at the reserve bank on uncollected checks from itself to its city correspondent. That such a result would arise more than occasionally is unlikely, however, because the city correspondent carefully watches the size of balances carried with it and would probably not permit the country bank to draw against its "float" of uncollected checks. The real advantage of using a city correspondent as a collection agency in such a case might appear to be merely the convenience of accumulating balances with the city correspondent by sending checks to it for col-

lection instead of collecting through the reserve bank and transferring the funds subsequently to the correspondent. It must be remembered that member banks still find it necessary to maintain balances with city correspondents in spite of the operations of the Federal reserve system. City correspondents are important links in the process of making loans on the call loan market and in purchasing commercial paper, bankers' acceptances, and bonds. Further, they are useful in furnishing customers with drafts on other cities, which are still frequently needed in spite of the increased acceptability of ordinary checks. Likewise, any connection which the smaller banks have with the foreign exchange market is through their city correspondents. Finally, country banks call upon their city correspondent banks for miscellaneous types of services not available from the reserve bank, including the furnishing of credit information desired by both the bank itself and its customers.³

Collection of checks by nonmember banks. The nonmember bank, unless qualified as a clearing nonmember, has no direct access to the clearing facilities of the reserve banks. It does have indirect access, however, through its member bank correspondents, which cheerfully undertake the task of collection in return for the favor of the nonmember's deposit.

Only one form of check is denied access to the reserve bank collection system—namely, checks on nonmember banks which refuse to remit at par for checks presented through the mails. Checks drawn on these banks must be collected through the correspondent bank system.

At the end of 1939 there were 6,362 member banks (all on the par list, of course), 5,396 nonmember banks (other than mutual savings banks) on the par list, and 2,717 nonmember banks not on the par list. Although the number of banks on the nonpar list was about 18 per cent of the total number of commercial banks, they carried only about 2 per cent of the total deposits of commercial banks. Ninety per cent of the nonpar banks were insured, and 83 per cent of them were small banks with deposits

³ H. Parker Willis believed that this dependence of country banks upon their city correspondents is due to the pressure exerted by the city bankers upon the Federal reserve banks to prevent the latter from performing correspondent services. He reported that at first the Federal Reserve Bank of New York offered full correspondent services to its members but later withdrew them to avoid antagonizing the big city banks. *The Theory and Practice of Central Banking*, New York, Harper & Brothers, 1936, p. 92.

of less than \$500,000. Eighty-five per cent of them were located in towns with a population of less than 2,500.⁴

The nonpar banks were distributed as to Federal reserve districts in the following manner:

Boston	0	Chicago	217
New York	0	St. Louis	442
Philadelphia	0	Minneapolis	703
Cleveland	2	Kansas City	176
Richmond	295	Dallas	156
Atlanta	698	San Francisco	28

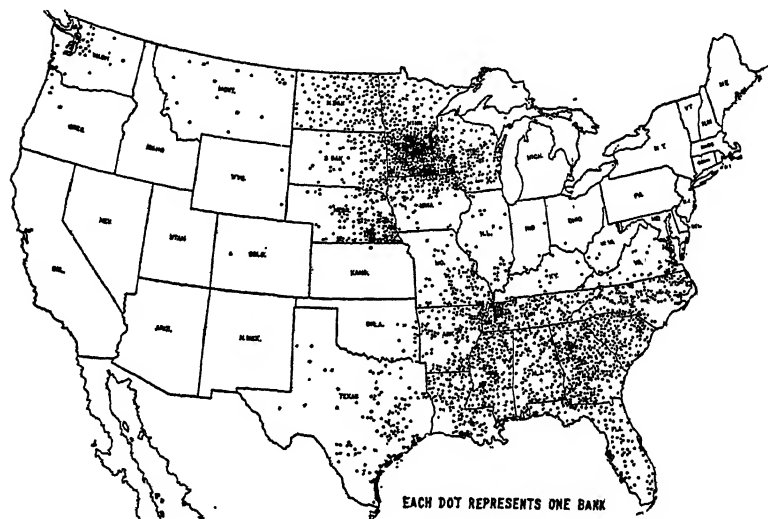


CHART 2. NONPAR BANKS, DECEMBER 31, 1938. This map excludes mutual savings banks and includes some private banks on which checks are drawn but which do not report to state banking departments. (Reprinted by courtesy of the Board of Governors of the Federal Reserve System.)

It is evident that the nonpar banks are located mainly in the agricultural areas. The continued importance, in point of numbers, of the nonpar banks makes it desirable to examine briefly the practice of refusing to remit at par.

The exchange charge. A bank's contract with its depositor is to pay cash on demand. Presumably the bank carries a sufficient cash reserve to permit it to meet all probable demands of depositors. When the depositor inconsiderately sends a check to another city where it is deposited in a bank which mails the check

⁴"The Par Collection System of the Federal Reserve System," by George B. Vest, in the *Federal Reserve Bulletin*, February, 1940. Also see the *Annual Report of the Board of Governors of the Federal Reserve System*, 1939, p. 55.

back for payment, the local drawee bank is confronted with a different sort of problem from that arising from a simple presentment of a check at the window. The drawee bank must "remit" the amount to the bank presenting the check. This may be accomplished by actually shipping currency, but more commonly it is done by drawing a draft on a city correspondent located in the vicinity of the presenting bank. Such a draft is an acceptable means of payment but entails the maintenance of a deposit with the city correspondent. To compensate for the extra trouble of keeping a deposit with the city correspondent, the drawee bank may remit something less than the face amount of checks presented. This deduction is known as an "exchange charge."

Before the Federal reserve banks instituted their collection system, it was common practice among banks to deduct exchange charges from remittances for checks presented through the mails. One may properly ask where the advantage in such a practice lay. It is apparent that any single bank which succeeds in maintaining its position in the banking world must sometimes receive funds in the form of checks and drafts on banks located outside its home city in substantially the same amounts as checks drawn on it and presented through the mail from out of town. How could a bank gain by making exchange charges on its remittances if it in turn had checks to collect on which exchange charges must be paid? The real explanation of the tenacious manner in which many banks cling to the practice lies in the fact that circumstances make it a game at which only one party can play. City banks have always competed for the deposits of country banks, a practice which has resulted not only in the payment of interest on these balances but also in the performance of many free services, not the least of which was the collection of out-of-town checks for country correspondents and the crediting of the full face value of these checks to the country bank's balance without deducting an exchange charge. On the other hand, the country bank would collect checks on banks in its neighborhood, remit for them as well as for its own checks sent in by the city correspondent, but deduct the exchange charge.

The advantages to the banking and business community arising from the smooth-working collection system of the reserve banks can be best visualized by a brief examination of the system which it superseded. The old system involved the use of correspondent banks as collecting agencies. The old national banking reserve requirements fitted into such an arrangement by permitting country banks to carry three fifths of their required

15 per cent reserves on deposit in banks in cities designated as reserve and central reserve cities. Reserve city banks in turn were permitted to carry one half of their required 25 per cent reserves on deposit with banks in central reserve cities. State banks also were permitted to count deposits with banks in the money centers as part of their reserves. Thus there developed a network of bank correspondents. Country banks were able to get interest on reserve balances and check collection service. In turn they collected checks sent them by the city correspondents. In order to avoid, so far as possible, the payment of exchange charges, city banks entered into reciprocal agreements with other banks to collect and remit at par for all checks drawn on surrounding banks. One result of this practice was that checks were not always presented by the most direct route. Instead, they tended to be sent to the "par points," where full credit would be obtained with no deduction for exchange. The collection process was therefore slowed down, and the size of the "float" of uncollected checks greatly increased.

Another circumstance prevailing at this time which augmented the size of the float was the practice by national banks of counting as part of their legal reserves any checks sent to their correspondents in the reserve or central reserve city, whether or not actually collected by such correspondents. There was thus a temptation to send checks to a near-by correspondent which would make no exchange charge, regardless of the effect, favorable or otherwise, which such a move would have on the orderly collection process.

The excessive float resulting from the haphazard collection machinery has been commonly condemned on several scores. First, it had an inflationary tendency on the banking system by exaggerating the nominal legal reserves, through counting uncollected checks on other banks as reserve. Thus reserve accounts of country banks were expanded by the practice of granting immediate credit for uncollected checks. City banks were, in fact, making loans to their correspondents by the amount of the float. This difficulty, however, could have been corrected by a requirement that banks count only collected items as reserves. A second objection to the slow collection process and large float was the opportunity afforded for "kiting." This refers to the practice of drawing a check against one account to establish another. When immediate credit is given for checks deposited, it is possible to develop a series of accounts based upon nothing more substantial than uncollected checks on other banks. A third

objection to the old pre-Federal reserve collection system is found in the delay and expense involved in such a cumbersome arrangement.

The present collection system furnishes a smooth-working, economical method of collecting checks. The clerical work and the shipping of both checks and currency are kept at a minimum. The troublesome exchange charge is practically abolished, since most checks are collected at par. One should notice, however, that the system does not entirely avoid the cost of collecting checks. A large part of such cost is shouldered by the reserve banks, which carry on elaborate clearing operations and pay the expense of currency shipments between themselves and the clearing banks. A considerable item of expense in collecting out-of-town checks arises from the fact that the bank gets only deferred credit until collection is completed by the reserve bank. It follows, therefore, that a bank which receives an out-of-town check from a customer and gives him cash or full immediate credit on his account is making a loan to that customer during the collection period, as well as incurring the expense of handling the check itself. It is not unreasonable, under such circumstances, that banks should insist that the customer bear this expense by carrying an adequate balance in addition to that represented by uncollected items or else pay a small service charge.

The Federal reserve collection system which we now have is the result of gradual development. The introduction of a system of clearing by the reserve banks was from the first considered one of the essential duties of the Federal Reserve Board. There were, however, a number of difficulties in the way. Country banks, in particular, which profited by the practice of making an "exchange charge" when remitting for checks presented through the mails, quite naturally resisted any movement in the direction of a compulsory remittance for checks at par, which would deprive them of their profit.

Voluntary plans for clearing checks through the reserve bank were established in a number of districts in June, 1915, with but little success. Less than 25 per cent of the banks eligible to join such plans did so.⁵ Therefore a new plan, compulsory upon all member banks, was started on July 15, 1916.⁶ Under it all member banks were permitted to send checks to the reserve banks for collection and were required to remit at par to the reserve banks

⁵ *Annual Report of the Federal Reserve Board*, 1915, p. 16.

⁶ *Ibid.*, 1916, pp. 9-10.

for all checks drawn on themselves and presented through the reserve banks. This is substantially the present form of the collection system, except for the fact that the reserve banks originally levied a charge for collecting each item. Since 1918 no charge has been made for this service. By amendment on June 21, 1917, Section 13 of the Federal Reserve Act was changed specifically to permit nonmember banks to participate directly in the collection service of the reserve banks by establishing clearing balances with the reserve banks. Most nonmember banks, however, seem to prefer to utilize the services of member bank correspondents rather than to maintain such balances.

Introduction of par collection of checks. It is evident that the introduction of the compulsory collection plan in 1916 compelled all member banks to remit to their Federal reserve banks at par for checks sent in for payment. Since this economical way of collecting checks on such banks was available, they were forced by circumstance to give up exchange charges no matter through what channel checks were presented.

From the first, the reserve banks insisted upon par remittance by member banks. There were, however, a large number of nonmember banks which were very reluctant to give up the remunerative practice of charging exchange. On the other hand, an effective par collection system could hardly be established without bringing in nonmember as well as member banks. There was the further point that banks which charged exchange were unfairly enjoying the benefits of the par collection system, since they sent their out-of-town checks to member bank correspondents and had them collected at par through the reserve banks. The reserve banks, therefore, set themselves the task of bringing all nonmember banks into the par system.

In many districts it was relatively easy to persuade nonmembers to remit at par. In areas where member and nonmember par banks were in direct competition with the nonpar banks, the latter were at the very obvious disadvantage of seeing checks drawn on them accepted at less than par. In other areas where competition of par banks was less important, many banks refused voluntarily to remit at par. The reserve banks thereupon adopted the plan of employing some agency to present checks at the windows of the banks where full payment in cash could not be avoided. This method was quite effective in reducing the number of nonpar banks, for it prevented the use of drafts on interest-bearing deposits in correspondent banks for the remittance and required larger amounts of vault cash. Much opposi-

tion to the use of such agents by the reserve banks for direct presentment of checks on nonpar banks arose among nonmember banks. The Federal Reserve Board, however, justified and approved of the action taken by the reserve banks. It held that since Section 13 of the Federal Reserve Act⁷ specifically permitted the reserve banks to receive from member banks checks and drafts payable on presentment, and since Section 16 permitted the exercise of clearing functions for members, it was necessary that the reserve banks should accept any and all checks, whether drawn on par or nonpar banks. Since the act⁸ specifically prohibited the payment of exchange charges by the reserve banks, they had no choice except to proceed to collect checks on nonpar banks at the window.⁹

Direct presentment of checks for cash (at the window of the drawee banks) by the reserve banks was resisted in two ways. First, banks endeavored to obtain injunctions against the reserve banks, restraining them from collecting checks in any manner other than through the mails. They charged that the reserve banks were guilty of oppressive, embarrassing, and highhanded methods in their attempts to enforce par collection. The Supreme Court of the United States, in a decision rendered on June 11, 1923, established the right of Federal reserve banks to collect a check drawn on any bank if the check is "payable on presentation and can in fact be collected consistently with the legal rights of the drawee without paying an exchange charge."¹⁰ Thus checks might be presented for payment in cash at the window provided none of the legal rights of the drawee bank was violated.

In the meantime laws were passed in several states which were designed to protect nonpar banks from being coerced into joining the par system.¹¹ These laws either required all state banks to make an exchange charge on checks presented by any bank or other collection agency (as was the case in Mississippi), or gave them the right to make charges (as in the case of Louisiana and South Dakota). Protesting checks for nonpayment because of refusal to remit at par was commonly prohibited. In another decision rendered on the same day as the one previously cited, the United States Supreme Court upheld the constitutionality of a

⁷ As amended September 7, 1916.

⁸ As amended June 21, 1917.

⁹ *Annual Report of the Federal Reserve Board*, 1919, p. 41.

¹⁰ See *Federal Reserve Bulletin*, 1923, p. 788; 262 U. S. 643.

¹¹ For a discussion of this subject, see "The Development of Par Collections by Federal Reserve Banks," *Letter No. 6*, Federal Reserve Bank of Richmond, May, 1922.

North Carolina law authorizing state banks to charge exchange and to make payments in exchange drafts when checks drawn on them were presented by or through the Federal reserve banks.¹²

Thus the power of the reserve banks to compel nonmembers to join the par system was confined to the presentment of checks at the windows of nonpar banks for full cash payment only when not prohibited by law. Obviously, the way to an establishment of a complete par collection covering all parts of the country was definitely blocked. The Federal Reserve Board, therefore, directed the reserve banks to discontinue the use of agents other than banks for the purpose of making collections at par of checks drawn on nonpar banks.¹³ At the present time, the reserve banks are forbidden to receive any check drawn on a nonpar bank.¹⁴

Collection of nontransit items. The collection facilities of the Federal reserve banks are not limited in use solely to the collection of checks. Section 13 of the Federal Reserve Act permits the reserve banks to receive, for collection, maturing notes and bills of exchange. A member bank owning a note or bill of exchange payable in another city may therefore utilize the services of the reserve banks to effect its presentment and payment. If the note or bill is collectible without cost through some member bank, the reserve bank, on receipt of the proceeds, credits the full amount to the reserve account of the member sending it in for collection. If the reserve bank is compelled to pay a collection fee to the bank presenting and collecting the instrument, it credits the account of the original member for the amount, less the collection charges. Items which are sent to other Federal reserve districts for collection are settled in the same general manner as interdistrict check collections.

Federal reserve exchange. It was the custom of banks in the days before the establishment of the Federal reserve collection system to maintain balances in reserve and central reserve cities. These balances were desirable and necessary in order to handle the task of getting checks collected and remitting for checks presented by other banks through the mails. Further, such balances were useful to draw against when customers desired to use drafts on the financial centers instead of personal checks for making payments.

¹² *Federal Reserve Bulletin*, 1923, p. 789. (262 U. S. 649.)

¹³ *Federal Reserve Bulletin*, 1923, p. 1194.

¹⁴ Federal Reserve Board, *Regulation J*, Section III (3).

The introduction of the Federal reserve system, with its requirement of balances carried with the reserve banks, made it desirable to reduce the need for carrying balances with city correspondents. One step in this direction was the development of the par check collection system already described. Another was to provide facilities, through the Federal reserve banks, for furnishing drafts to customers payable on the money centers of the country. In order that member banks might furnish their customers with drafts payable at sight in any city without carrying an account with correspondents, a special system was arranged. Member banks were given the privilege of drawing two types of drafts against their reserve accounts with their Federal reserve banks, enumerated below:¹⁵

1. Federal reserve exchange drafts might be drawn by a member bank agreeing to use a special form of draft and further agreeing to notify the reserve bank on the day such a draft was drawn. These drafts were receivable at any reserve bank at par for immediate credit. The Federal Reserve Bank of Richmond permitted such drafts to be drawn in amounts up to \$250. Later the amount was increased to \$5,000 in an effort to popularize the use of the exchange draft.¹⁶

2. Federal reserve transfer drafts could be drawn for transfer of larger amounts. These drafts were to be made payable at any specified reserve bank and were to be received at par at the designated reserve bank. As a condition for their use, however, the drawing member was required to give notice of such drafts to the drawee reserve bank, which in turn was required to give notice, through the leased wire system, or otherwise, to the designated bank.

The transfer drafts were obviously cumbersome and were never put to any substantial use. In the Chicago district, the maximum size of the exchange draft was later fixed at \$50,000, while the use of the transfer drafts has been abolished.¹⁷

This attempt to establish the use of drafts on the reserve banks as a means of interdistrict remittances in place of drafts on city correspondents has largely proved fruitless, owing to the continuation of the practice of carrying bankers' balances with city correspondents. By paying interest and performing other services, the city correspondents have made it worth while for country

¹⁵ "Federal Reserve Exchange," *Letter No. 17*, September, 1924, Federal Reserve Bank of Richmond.

¹⁶ *Ibid.*, pp. 3, 5.

¹⁷ *Bulletin No. 202*, July 29, 1925. Letter of December 29, 1933.

banks to maintain their deposits with them for use as working reserves. By 1924 it was reported that only a few member banks had elected to make use of the exchange draft.

Telegraphic transfers. An additional service which the reserve banks offer to members is the right to utilize the leased wire system, maintained between the Board of Governors at Washington and the several reserve banks and branches, for the transfer of funds by wire. The leased wire system was inaugurated on June 4, 1918.¹⁸ On July 1, 1918 daily settlements between reserve banks through the Gold Settlement Fund were begun, which further facilitated the use of the telegraphic transfer system.

At the present time, any member bank may request its reserve bank to transfer to any other member bank, whether located within or outside its own district, any sum of money in multiples of \$1000. Such a request may be sent to the reserve bank by mail or by telegram sent "collect." On receipt of this request, the reserve bank deducts the amount from the member's reserve account. If the member bank which is to receive the credit is located in the same district as the sending member, the transfer is merely a matter of a bookkeeping entry. If the bank which is to receive credit is located in another district, the reserve bank will telegraph the reserve bank of that district to credit the receiving member bank's reserve account. Settlement between reserve banks is made daily through the Interdistrict Settlement Fund. The member bank receiving the credit is advised by mail by the reserve bank when the transfer is complete. In special cases involving large sums, and when a request is made, the reserve bank advises the receiving member by telegraph at the member bank's expense.¹⁹

The above-described services are performed free for member banks over the private wire system of the reserve banks. In addition, other telegraphic transfers over commercial wires will be made at the expense of member banks. Such transfers may be for any amount and will be accepted from and paid to member banks only, but may be made for the use of any other bank or business firm. Nonmember clearing banks may use the system to transfer funds in multiples of \$100 provided they pay the telegraph charges.

¹⁸ "Telegraphic Transfers," *Letter No. 19*, Federal Reserve Bank of Richmond, July, 1926, p. 3.

¹⁹ *Ibid.*, p. 8; *Bulletin No. 255*, Federal Reserve Bank of Chicago, July 1, 1939.

Summary. The par collection instituted by the reserve banks has done much to increase the acceptability of bank checks throughout the country in making out-of-town as well as purely local payments. At most they suffer a discount of $\frac{1}{10}$ of 1 per cent charged against the individual or firm depositing them for credit as a service or interest charge to compensate the collecting bank for the time and trouble involved in making the collection. Regardless of seasonal changes in the direction of trade, we have in a bank check drawn on a par bank an instrument acceptable at par. For purposes which are not adapted to the use of personal checks, the Federal Reserve System provides exchange drafts payable at par at any reserve bank. In addition, member banks have available the telegraphic transfer system, which enables them without delay or cost to build up their accounts with city correspondents at the expense of their reserve account with the Federal reserve bank, thus placing themselves in a position to provide drafts on city correspondents without expense if that method of furnishing exchange drafts on other cities is preferred to the use of the Federal reserve exchange drafts.

Before the Federal reserve facilities were developed, the seasonal shifts in the demands for funds in different parts of the country resulted in the appearance of a premium or discount, as the case might be, on drafts payable in distant cities. For example, suppose country banks during the summer lull desired to transfer funds to their correspondent in New York City. Two ways of making the transfer existed: (1) currency might be shipped; or (2) drafts payable in New York City might be purchased if any were available. Such drafts would sell at a premium equal to the cost of shipping currency. In the autumn, when country banks wished to recover their funds from the city banks, they might pay transportation charges on currency or sell drafts on New York. The discount on such drafts would again appear equal to the cost of shipping currency. At the present time, we possess as nearly perfect a system of making payments quickly and with small cost as one could desire.

CHAPTER X

THE BANK'S RESERVES

THE ASSETS of a bank are of two general classes. The first class consists of "earning assets" and is made up of loans and investments on which interest is received. The second class includes assets which do not in themselves earn any direct income but merely facilitate the banking functions that give rise to the "earning assets" proper. Nonearning assets consist of fixed investments in building and fixtures,¹ cash items, and the bank's primary reserves. Our analysis of bank assets may best begin with the nonearning assets which constitute the reserves.

Bank Reserves

A bank receives deposits which are obligations to pay cash according to the terms of the deposit contract. If the depositors of a bank are sufficiently numerous, there is a reasonable expectation that funds withdrawn on any given day by one group of depositors will be offset in large measure by new deposits of funds by other customers. This expectation is increased if a considerable degree of diversification exists among the depositors' business interests. If a banker were certain that new deposits and withdrawals would actually offset each other every day, the need for cash would be small indeed. Actually, a considerable variation in the rate of new deposits and withdrawals exists from day to day, even though the general level of the bank's deposits may be quite stable. To be prepared to meet these variations, the bank must carry cash reserves in sufficient amount to insure its ability to fulfill its obligations as they arise.

Size of cash reserves. The relative size of the cash reserves on the one side, in comparison with deposit obligations on the other, depends upon a number of considerations:

¹ Exception might be made for that part of the bank building which is sometimes not utilized for banking purposes but is leased for office space, and thus earns a direct income for the bank.

1. The number of depositors and the diversity of their business interests.
2. The confidence of the public in the bank. (Evidence of this is found in the excessive cash holdings of banks during times of bank failure.)
3. The particular nature of the deposits. (For example, customers who have periodic payroll requirements present special reserve problems.)
4. The readiness with which the bank can increase its cash by borrowing or by liquidating its earning assets.
5. The demand for loans at the time. (If business is depressed, bank reserves tend to rise because of a lack of outlet for loanable funds.)

Form of primary reserves. The primary reserves of a bank take the form of cash in the bank's own vaults and demand deposits with other banks. Banks which are members of the Federal Reserve System carry reserve balances with two kinds of banks. First, the law requires that an amount equal to a certain fractional part of the deposits be maintained with the Federal reserve bank. This constitutes the "legal" reserve. In addition, banks normally carry deposit balances in banks of cities with which the local community has active trade relations.

Barring some contingency which may make them unavailable when wanted, the deposits in other banks are the equivalent of cash to the depositor bank. Further, they have other advantages over vault cash. Many checks which are drawn by the customers are sent out of town and are presented for payment through the mails by banks in other cities. A draft drawn on a reserve balance in the bank of another city is an acceptable means of paying these checks and is cheaper than shipping cash. On the other hand, the bank receives from depositor-customers checks and drafts payable in distant cities. These checks are sent to city correspondents for collection, and the proceeds may then conveniently be credited to the sending bank's reserve account. Thus it is evident that balances carried in banks of other cities may be as useful a form of reserve as is cash in the bank's own vault. Further, in the past it has been the practice of city correspondents to pay interest on such deposits, thereby adding to the attractiveness of carrying reserves in deposit form.²

² This practice has ceased with the prohibition of payment of interest on demand deposits by all insured banks. Formerly member banks maintained with the Federal reserve bank, which pays no interest on deposits, only those reserves required by law. Other reserves were deposited with interest-paying banks.

Importance of vault cash. The proportion of reserves carried as cash in vault to that carried in deposits in other banks varies considerably from bank to bank, depending upon particular conditions. If the bank in question is located near the bank in which it carries its reserve balances, its cash can be allowed to fall to the minimum required for current over-the-counter uses. If any extraordinary demand for cash arises, it is but a question of a few hours at most until cash can be obtained. On the other hand, if the bank is remotely situated from its depository bank, its cash requirements will be somewhat higher. This is well illustrated by Table 6, which shows reserves of national banks in 1933 before high excess reserves distorted the picture.

TABLE 6

RESERVES OF NATIONAL BANKS IN PERCENTAGE OF GROSS DEPOSITS*
(As of June 30, 1933)

	<i>Central Reserve City Banks</i>	<i>Reserve City Banks</i>	<i>Country Banks</i>
Cash in vault	8%	1.2%	1.9%
Due from Federal reserve banks	12.7	7.7	6.1
Due from other banks	4.4	14.8	9.8
Total reserves	17.9	23.7	17.8

* Compiled from the *Annual Report of the Comptroller of the Currency*, 1934, pp. 413-433.

Legal reserves and working reserves. Guided by experience, the intelligent banker will maintain such a proportion of his deposits in cash as will enable him readily to meet all demands. To do less is to court disaster. If the banker carries more than is reasonably necessary, he cuts down his earning assets and reduces his profits. Here in the United States the chartering of banks has been carried on with such a lack of discrimination, in the belief that individual freedom should extend to banking, that a great many banks have been founded and operated by persons with little skill or natural ability as bankers. The resulting failures and the attendant public inconvenience have brought about universal regulation of banking operations. These regulations have included the fixing of minimum reserve requirements.

It thus happens that all commercial banks in the United States are required, by law or by orders of supervising authorities, to maintain certain minimum reserves against their deposit liabilities. The law normally forbids the making of any new loans or the paying of any dividends while reserves are below the legal requirements. In addition, there may be specific penalties at-

tached for failure to maintain reserves at the proper figure.³ The effects of these legal reserve requirements are that: (1) a bank cannot legally expand its loans when its reserve is deficient; and (2) in the face of penalties, it is loath to pay out cash when by doing so it impairs its legal reserve position.

The result of this attitude toward legally required reserves is that in practice such reserves constitute, for the individual bank involved, nothing more than a possible last line of defense against emergency depositor demands. Indeed, in the past they have failed to function even in that capacity. In the days before there were Federal reserve banks to come to their rescue, banks periodically found themselves unable to meet depositors' demands without impairing their legal reserves. Under those circumstances they chose to suspend payments temporarily rather than reduce their reserves below the legal minimum. It follows, then, that legal reserves constitute funds which add little, if anything, to the direct liquidity of a bank.

This peculiar development in the attitude of bankers toward legal reserves has caused the Committee on Bank Reserves of the Federal Reserve System to conclude that the legal reserve requirements for member banks are useful only: (1) in influencing the volume of bank credit which can be maintained by the banks; and (2) in supplying the Federal reserve banks with funds with which "to pursue an effective banking and credit policy."⁴ It follows, therefore, that banks must carry working reserves in excess of their legal minimum requirements in order to function properly. These working reserves for member banks may consist of: (1) cash in the bank's own vault; (2) demand deposits with other banks; and (3) deposits with the Federal reserve bank in excess of the legal requirements. In the case of nonmember banks, working reserves over and above the legal requirements may likewise be carried in any manner which best suits their needs. Before the passage of the Banking Act of 1933, nonmember banks received interest on that part of their reserves, legal and otherwise, which was deposited with other banks. The member banks received no interest on legal reserve balances in the Federal reserve banks but did obtain interest on their other working reserves deposited elsewhere. However, the prohibition

³ This is true of members of the Federal Reserve System. The earlier provision prohibiting Federal reserve member banks from making new loans and paying dividends during periods of legal reserve impairment was removed by amendment of the Federal Reserve Act of July 7, 1942.

⁴ *Report of the Committee on Bank Reserves of the Federal Reserve System, 1931*, p. 5. Member banks are required to carry their legal reserves as deposits in the Federal reserve banks.

of payment of interest on demand deposits under the 1933 law effectually prevents either legal or working reserves of any banks from earning interest.

One should note that in practice the legal reserves of banks are actually in a constant state of flux. They constitute a reservoir in and out of which payments may be made continuously, while the general level remains about the same. Above this are the working reserves which are depended upon to absorb any short-time net changes in the cash position of the bank. The size of this excess of working reserve will normally depend upon: (1) the till money requirements from day to day; (2) the probable short-time variations in net deposit withdrawals; and (3) the ease or difficulty with which earning assets (secondary reserves) can be converted into cash. Members of the Federal Reserve System which are located near Federal reserve banks and are in possession of assets readily usable for borrowing at the reserve banks carry a low volume of such working reserves, while those at greater distances carry more.⁵

Legal reserve requirements.⁶ The basic reserve requirements for banks which belong to the Federal Reserve System are fixed by the Federal Reserve Act and vary according to whether de-

TABLE 7 *

MEMBER BANK RESERVE REQUIREMENTS
(In Percentage of Deposits)

Classes of Deposits and Banks	June 21, 1917 to Aug. 15, 1936	Aug. 16, 1936 to Feb. 28, 1937	Mar. 1, 1937 to Apr. 30, 1937	May 1, 1937 to Apr. 15, 1938	Apr. 16, 1938 to Nov. 1, 1941	Nov. 1, 1941 and after
	(Minimum stat. figure)					
On net demand deposits:						
Central reserve city banks	13	19½	22¾	26	22¾	26 **
Reserve city banks ..	10	15	17½	20	17½	20
Country banks	7	10½	12¾	14	12	14
On time deposits:						
All member banks	3	4½	5¾	6	5	6

⁵ See Table 6 on page 132. Reserve city banks carry, on the average, larger working reserves in the form of bankers' balances than do country banks, because of their larger holdings of country bank reserve balances.

⁶ For a complete summary of state bank legal reserve requirements, see the *Federal Reserve Bulletin*, March, 1937. For a historical account of American experiences with the regulation of bank reserves, see R. G. Rodkey's *Legal Reserves in American Banking*, 1934, *Michigan Business Studies*, Vol. VI, No. 5.

* Pressure of war finance drained heavily the excess reserves of the central reserve city banks of New York and Chicago. Consequently reserve requirements for these banks were reduced from 26 to 20 per cent as of October 3, 1942.

** Since October 3, 1942, reserve requirements against demand deposits of central reserve city banks have been 20 per cent by action of the Board of Governors.

posits are time or demand and with the classification of the city in which the bank is located. Furthermore, since 1935 the Board of Governors has been empowered to set legal reserve requirements from an amount not less than the statutory requirement to one which is not over twice that figure. The reserve requirements as fixed by law and by the action of the board appear in Table 7.

The National Bank Act designates New York and Chicago as "central reserve cities" and certain other cities as "reserve cities," subject to the right of the Board of Governors to make changes in the classification as desired. In addition, the Federal Reserve Act permits the Board of Governors, by a vote of five, to modify the classification of banks in outlying areas of reserve and central reserve cities so as to reduce their reserve requirements. Under this provision the board has reclassified most banks in those parts of Chicago and New York which are outside the main financial areas; and as a result, central reserve city banks include only banks in the main financial districts of those cities.

Method of computing legal reserve requirements. To compute its legal reserve requirements, a member bank must classify its deposits. Its demand deposits consist of all deposits not classified as time deposits. Time deposits comprise all unmatured deposits having more than thirty days to run until maturity at the time of the deposit, or payable in not less than thirty days after written notice. Savings deposits on which the bank may require not less than thirty days' notice are classed as time deposits, as are postal savings deposits. For purposes of this classification, a waiver by the bank of the right to demand notice or refuse payment until maturity does not change the character of a time deposit.

Demand deposits against which reserves must be carried are computed by deducting from the gross demand deposits the amount of "due from banks." This item includes all balances with other banks except the Federal reserve banks and foreign banks, and checks on other banks in process of clearing or collection. Gross demand deposits include government and individual demand deposits, "due to banks," and certified and cashiers' checks outstanding.*

The Board of Governors, in its regulations dealing with reserve requirements, observes that "it is essential that the law with respect to the maintenance by member banks of the required minimum balances be strictly complied with." Each member bank

* Until six months after the end of the war a member bank need not include among its deposits subject to reserve requirements deposits of the United States arising solely from subscriptions to Government securities by or through such member banks. (Act of April 13, 1943.)

computes its reserve requirements upon the basis of its net deposits at the opening of each business day. Banks located in the central reserve cities and in the reserve cities compute their required reserves on the basis of average daily net deposit balances covering weekly periods. Reserve requirements of other member banks are computed on a semi-monthly basis. The actual legal requirements for these periods must, on the average, be equal to the required percentage of the average daily deposits. If the average reserves become deficient, a penalty is applied. To avoid this penalty, banks may increase their reserves during the latter part of the computation period by borrowing or rediscounting at the Federal reserve bank so that the *average* reserve for the period may be adequate.

The penalty for impairment of reserves is a charge of 2 per cent above the Federal reserve bank discount rate on ninety-day commercial paper on the first day of the month during which the deficiency occurred, and is applied to the average daily deficiency existing during any computation period. Chronic offenders may lose their charters if they are national banks, or their membership in the Federal Reserve System if they are state banks.

Methods of adjusting legal reserves. A member bank which finds its legal reserve position impaired may resort to any one of several methods for remedying the situation. The simplest and most direct way to increase reserves with the Federal reserve bank is to transfer working balances carried with other banks, when they can be spared. A second method, almost as simple, is to reduce call loans made on the central money markets either directly, if the bank is so located as to be making direct loans of this sort, or indirectly, if its call loans are being made through city correspondents.

If neither of these methods is available or adequate to meet the bank's needs, readily salable assets may be disposed of in the open market. Bankers' acceptances and short-time government obligations are particularly adapted for this use. Finally, the member may rediscount eligible paper with the Federal reserve bank or borrow from it in order to build up its reserve. In the long run, of course, as the ultimate method of increasing reserves, the loans and investments other than those mentioned above may gradually be scaled down.

Borrowed reserves. Over a short period of time, member banks sometimes find it advantageous temporarily to purchase or borrow reserves from other members which at the moment have an excess. This is profitable for the lending bank if the rate

paid by the borrowing bank is in excess of the rate on short-time investments available in the open market. Likewise, the borrowing bank gains if it has no bankers' acceptances or other low-yield, short-time paper to dispose of, provided it can borrow reserves at a rate below the rediscount rate of the Federal reserve bank. Since the Federal reserve discount rate is often higher than the rate on bankers' acceptances and short-time treasury obligations, the transaction may prove desirable to both banks involved. In practice, banks with acceptances and call loans often prefer to borrow "Federal funds," as reserves are called, to take care of a temporary deficiency, rather than dispose of acceptances and call loans. Early in 1937, when bankers' acceptances were earning $\frac{1}{4}$ of 1 per cent and call loans 1 per cent, Federal funds were being borrowed at $\frac{1}{8}$ of 1 per cent in New York City. The Federal reserve rediscount rate at that time was $1\frac{1}{2}$ per cent.

The process of lending reserves may involve the issue of a cashier's check by the borrowing bank (listed in its statement as money borrowed instead of deposits). The lending bank either issues a draft on the Federal reserve bank to the borrowing bank or arranges for a transfer by the reserve bank of funds from its reserve balance to that of the borrowing bank.¹

Legal reserve requirements vary with classification of cities. Cities and towns of the United States are classified as: (1) country districts; (2) reserve cities; and (3) central reserve cities. The minimum statutory reserves required against the demand deposits of member banks are 7, 10, and 13 per cent, respectively, for banks in the different locations. (On October 3, 1942, they stood at 14, 20, and 20 per cent by order of the Board of Governors of the Federal Reserve System.)

Reserve requirements based upon the city in which the bank happens to be located are a form of historical accident rather than an arrangement arising from present-day needs. When the present Federal Reserve System was adopted, it took over bodily the classification of cities of the old national banking system. Under that system, banks in cities classified as reserve and central reserve cities were permitted to carry on deposit part of the legal reserves of the national banks in cities of inferior classification. Naturally, the more responsible task of carrying reserve balances of other banks led to the legal requirement of higher cash reserves.

¹ *Federal Reserve Bulletin*, February, 1930, p. 81.

Today all legal reserves of member banks are held by the Federal reserve banks. Yet many banks in reserve and central reserve cities carry part of the working reserves of other banks and might properly be expected to maintain themselves in a more liquid position. However, we have seen that legal reserves under the present practices are not relied upon to furnish liquidity. It appears, therefore, that the only possible reason for requiring higher reserves in one class of city than in another has disappeared.

Excess reserves. When the available supply of legal reserves exceeds the minimum legal requirements, the banking system is in possession of "excess reserves." This occurs whenever, for some reason or other, the banks are unable or unwilling to expand their loans and investments to the theoretical limits set by the available reserve funds. So long as a member bank is indebted to the reserve banks for rediscounts or bills payable, idle reserve funds will promptly be used to retire such indebtedness. Substantial quantities of member bank excess reserves do not appear, therefore, until member banks are largely out of debt to the reserve banks.

Excess reserves of member banks reached a peak of nearly \$7,000,000,000 early in 1941. Responsibility for this tremendous volume of excess reserves may be placed upon: (a) the open-market purchases of government obligations by the Federal reserve banks, which stood at about \$2,200,000,000; and (b) the importation of about \$15,000,000,000 in gold. Because of the danger of price inflation based upon the use of these excess reserves, their existence has become a national problem of no mean proportions. Consideration of this problem must be postponed until later.

When gold is imported through New York City, excess reserves appear first in the banks of that city. To some extent these reserves become distributed among the banks of the interior when the government and private concerns borrow or issue securities in the New York money market and spend the proceeds in the other parts of the country. But the banks of the interior, on the other hand, tend to return excess reserves to the city banks when they build up their balances with their city correspondents. Thus, interbank balances tend to rise and fall directly with the rise and fall of excess reserves in the country as a whole.

Criticism of existing reserve requirements. There are several objections to the present method of computing legal reserve requirements for member banks, each of which will be considered

in turn. The requirement that all legal reserves must be deposited with the Federal reserve bank handicaps banks not located in the immediate vicinity of the reserve banks. As we have seen, reserve city and country banks must carry considerably more cash in vault in proportion to their deposits than do the central reserve city banks. There seems to be no good reason for this discrimination.

The existing method of computing reserve requirements is also criticized on the ground that it fails to exercise sufficient automatic control over the credit situation.⁸ The criticism centers around two features: First, the low reserve ratio on time deposits tends to cause banks to induce depositors to shift part of their demand deposits into the time-deposit classification. As a result, some time deposits may have an unusually high turnover, while an abnormal turnover of the remaining demand deposits may appear. Thus the low reserve against time deposits permits an expansion in the total volume of bank credit on the basis of a given amount of reserve funds. The second feature criticized is the complete lack of any offset for a rapid increase in the velocity of deposits. It has been properly pointed out that unsound inflationary conditions may arise quite as easily out of a rapid increase in the rate at which bank deposits are spent as out of an increase in the absolute amount of deposits. For example, between 1926 and the peak of the boom in 1929, the net deposits of member banks expanded about 12 per cent while debits to individual accounts rose about 66 per cent.⁹

Proposed remedies. The Committee on Bank Reserves proposed to remedy these defects by a complete change in the basis for legal reserve requirements. Their proposals were: (1) to abolish the distinction between time and demand deposits; (2) to abolish the exemption of government deposits from reserve requirements;¹⁰ (3) to require a flat reserve of 5 per cent against all *net* deposits; and (4) to require an additional reserve equal to 50 per cent of the average daily withdrawals from all deposits. In order that the reserve requirements might not become excessive, the maximum was fixed at 15 per cent of a bank's *gross* deposits. Some banks with highly active accounts might find the 50 per cent rule prohibitive; hence the limitation. In order, however, to make such a bank feel some restriction, the 15 per

⁸ *Report of the Committee on Bank Reserves of the Federal Reserve System, 1931.*

⁹ *Ibid.*, p. 10.

¹⁰ This change was incorporated in the Banking Act of 1935.

cent limit would apply to gross deposits. A bank with highly active deposits receives an abnormally large volume of checks, which are deductible, however, in computing net deposits. To prevent the 15 per cent limit from being abnormally low, gross deposits would therefore be used. Finally, (5) it was proposed that banks not located near a Federal reserve bank be given the privilege of counting vault cash as part of their legal reserve up to three-fifths of the total. Other banks would be permitted to count vault cash up to one-fifth of the total required reserve.

Criticisms of proposed reforms. The proposal that legal reserves of banks should be made to vary with the activity or velocity of bank deposits has been severely criticized by B. M. Anderson, former economist for the Chase National Bank of New York City.¹¹ He believes, first, that the restrictive effects of increased required reserves with increases in deposit activity are likely to be too belated to be effective. He holds, for instance, that the speculative boom in the stock market in 1928 and 1929 accumulated fuel in the form of excess reserves and expansion of credit during the preceding period when activity of deposits was low and money rates easy. Second, he holds that the tendency for the activity of deposits to remain high after the collapse of commodity and security booms and during the early period of liquidation would make reserve requirements based upon activity extremely inconvenient. It would accentuate the pressure for liquidation at a time when ease in the money market is required to permit more orderly liquidation to be accomplished. In the third place, he points out that, quite irrespective of speculative booms, there are cycles in the activity of bank deposits, which grow out of year-end business settlements and the longer settlement periods in agricultural regions where seasonal increases in activity sometimes continue for a period of several months. It would be unfortunate, he holds, to introduce a restrictive element into the banking situation merely because of the occurrence of such normal business variations. Particularly is this true in the light of the attempt of the Federal Reserve System to ease the pressure arising from seasonal variations in business and banking needs. Finally, he believes that the introduction of an inadequate automatic restriction upon the credit situation might reduce the feeling of responsibility on the part of the Board of Governors for taking positive action to check undue expansion through proper control of open-market and discount operations.

¹¹ *Chase Economic Bulletin*, April 25, 1932, Vol. XII, No. 1.

CHAPTER XI

THE BANK'S SECONDARY RESERVES

THE EARNING assets of a bank consist of all of the negotiable paper held by it, whether obtained by making advances to the bank's customers or by purchase in the open market. Further, they include all of the securities, both bonds and stocks, which the bank holds for investment. Finally, they include balances deposited with other banks insofar as these bear interest. These assets, then, are at the center of the whole banking operation. Upon their successful accumulation and arrangement depends the welfare of both the stockholders and the depositors. If they are sound and sufficiently liquid, the bank will be able to meet readily the demands of its depositors. Furthermore, they are the main source of revenue from which the expenses incident to banking operations and stockholders' dividends are to be met. One may classify the earning assets into three major groups: (1) secondary reserves; (2) loans to customers; and (3) bond investments. This classification is useful in spite of some tendency toward overlapping.

Relation of primary to secondary reserves. The primary reserves of a bank consist of cash on hand and demand deposits in other banks which are equivalent to cash. The relation of these reserves to the bank's deposits has been discussed in the preceding chapter. We found that the minimum reserves which the law requires to be maintained against deposits are in practice of little value to the banker in meeting the depositors' demands for cash. Actual drains of cash, whether over the counter, through adverse clearing house balances, or through an excess of checks presented by out-of-town banks, must be met out of actual cash or out of deposits in other banks in excess of legal reserve requirements. This excess, comprising what might be called the "working reserve," in contrast to the legal reserve, must be adequate to care for most day-by-day demands in the case of banks too remote from the money market to be able to replenish

reserves on a moment's notice.¹ Even the working reserve must be maintained at some reasonable level in order that the bank's business may move on without interruption. It is apparent, therefore, that any substantial variation in the incoming or out-flowing cash of a bank cannot be cared for by drawing on either the legal or the working reserves. Since all banks are from time to time subject to drains arising from the idiosyncrasies of the individual depositor, the irregular and seasonal variation in the requirements of business, or possible temporary losses of depositor confidence,² they must be prepared to increase their cash holdings quickly, easily, and without loss. In order to do this, a bank should number among its assets loans and investments of a highly liquid nature, in sufficient quantity to provide against all normal cash requirements that might possibly arise. The bank assets that are of this highly liquid nature are referred to as "secondary reserves."

Size of secondary reserves. The relative size of a bank's secondary reserve depends upon a variety of circumstances. Primarily, the nature of the bank's business, the diversification of deposits, the seasonal variations in cash requirements, all determine the volume of highly liquid assets required by any individual bank. The correct amount can be discovered only through experience. In addition to the minimum requirements indicated by experience, the conservative banker must necessarily allow for unusual, unpredictable needs. Local or general depression in business often tends to set up a heavy adverse trade balance for a given area, which then experiences heavy drains of cash out of the banks located therein. A loss of confidence in banks growing out of business and bank failures may also create trouble. Since such needs are more likely to arise at the culmination of periods of prosperity or boom, it would seem desirable that particular care be taken to maintain a high proportion of liquid assets at such times.

The impossibility of generalizing too much in the matter of necessary secondary reserves is emphasized by Mr. Fred A. Garlock in an article entitled "Two Country Banks in Iowa and Virginia":³

¹ This is not strictly true, since the method of computing member bank reserve requirements permits some daily variation in actual legal reserve, provided that the average for any given computed period is up to the legal requirement.

² This is particularly likely in times of acute depression and business failures.

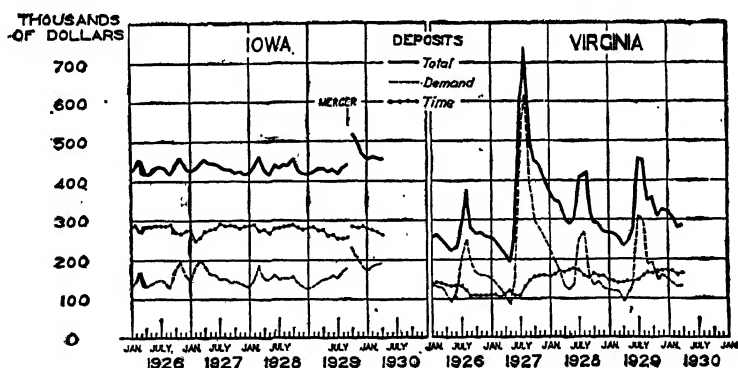
³ Quoted by permission from the *American Bankers Association Journal*, October, 1932, pp. 54-57.

Measures intended to assure the solvency of country banks often are formulated with little regard for the vast differences among these institutions. The differences are not merely nominal. On the contrary, they are so great that requirements or policies which may be well adapted to some banks are sometimes totally unsuitable for others. Although much can be said in favor of uniform standards of banking practice, it is easily possible to carry the idea of uniformity too far.

An excellent example of this point is found in the varying needs of country banks for liquid assets. Instead of discussing the subject in general terms, let us use two banks, representing widely different types of country banking, for comparative analysis. Both institutions were organized before 1910 and still maintain open doors to their customers. Although their policies may not have been the best, the banks at least have survived these troublesome times.

The comparison begins with the types of agriculture served by the banks. One is located in central Iowa where a combination of crop and livestock enterprises produces a year-round income for farmers, and the expenses of production also are spread throughout the year. The other is located in a section of Virginia where the principal sources of income are early white potatoes, peas, lima beans, and a few other perishables. Expenses of production in this area are heavy from November to the middle of June, but the marketing season covers only the period from May through September. A large part of the income is received in June and July.

The effects of these differences are clearly apparent in the deposit trends of the two banks. In the Iowa bank, deposits run a comparatively even course with little fluctuation from one time of the year to another. Deposits of the Virginia bank, however, rise to a tremendous peak from May to July or August, after which they fall continuously to a low point in the following



From *American Bankers Ass'n Journal*, Oct., 1932.

CHART 3. VARIATIONS IN DEPOSITS OF AN IOWA AND A VIRGINIA COUNTRY BANK.

summer. Moreover, changes in the annual minimum and maximum levels of deposits are greater in the Virginia bank than in the Iowa bank.

In so far as the seasonal demands of depositors determine the need for liquid assets, it is obvious that these two banks are in radically different positions. Seasonal requirements of the Iowa bank's depositors impose little need for liquidity, as a comparatively small cash reserve would absorb most of the

fluctuations of deposits. But the Virginia bank must hold liquid assets in July or August equal to 40 to 50 per cent of its deposits if it is to meet the withdrawals which commonly occur in the following months. An extra margin of liquid assets is needed to protect against annual changes in the lows of deposits. As the seasonal trough of deposits is approached, the volume of liquid assets needed, of course, grows less.

In both banks the need for liquidity arises more largely from the demand accounts than from time and savings accounts. . . .

An interesting method for computing the needed secondary reserves for any particular bank has been proposed by Elmer Hartzel.⁴ He suggests that the expected maximum fluctuation in deposits be added to the changes in local loans if they move in opposite directions, and that one be subtracted from the other if they move in the same direction, in order to find the secondary reserve requirements to meet the needs for any particular time. Thus, if deposits tend to decline while local loans also decline, the decline in local loans provides the funds to meet deposit withdrawals. But if local loans increase with deposit withdrawals, secondary reserves must be available to meet the combined losses of cash from both sources.

Composition of secondary reserves. There is some difference of opinion as to the specific type of banking assets that can properly be classified as secondary reserve. In one respect, however, there is general agreement. Secondary reserves should consist of *assets which can be turned into cash promptly and without loss*. Ready marketability is therefore a prerequisite for assets whose maturity is not immediate. Moreover, even readily marketable bonds should be reasonably near to maturity to avoid the possible loss attending a sale in times of tight money and high interest rates. Banks frequently find it necessary to dispose of bonds when high money rates cause the longer-maturing, fixed interest-bearing obligations to lose market value.

More specifically, secondary reserves may include high-grade, readily marketable bonds nearing maturity. In addition, they may comprise high-grade, short-time commercial paper and bankers' acceptances. Prime commercial paper purchased in the open commercial paper market is well adapted for use as secondary reserve for several reasons. First, it can be purchased in amounts and with maturities which suit the needs of the individual banker. It is issued in convenient denominations. Maturities can be arranged so that funds will be forthcoming to the bank at

⁴ "The Measurement of a Bank's Secondary and Investment Reserves," *Journal of Business*, October, 1934, p. 344.

such times as banking needs dictate. Since open-market borrowers do not ask for renewals, their paper can be relied upon as a certain source of cash. Further, commercial paper, when within ninety days' maturity, is normally eligible for rediscount and can be turned into cash through sale, after indorsement, to the Federal reserve bank.

Bankers' acceptances form another valuable addition to secondary reserves. They are desirable because of their high quality and relatively short maturity. Their ready marketability is augmented by the willingness of the Federal reserve banks to purchase them at a quoted buying rate. The same advantages exist for short-term government obligations. In addition, government securities, both long- and short-term, may be used as collateral for member banks borrowing at the Federal reserve banks.⁵

Call loans on the stock market also play an important part in secondary reserves. They are favored by the banker since they furnish him the most convenient method for making daily adjustments in his reserve balances. When reserves are above normal, the bank can increase call loans, while a reversal of the process enables it to correct reserve deficiencies.

There is a difference of opinion as to the propriety of including customers' paper eligible for rediscount as part of a bank's secondary reserve. To be sure, a member bank is normally able to obtain additional cash or reserves through the process of rediscounting. Why, then, should not such paper be counted as secondary reserve? Several reasons can be suggested. First, customers' paper cannot be rediscounted without the member bank's indorsement. Therefore, the bank cannot sell the paper outright as it can bonds, bankers' acceptances, and short-time treasury obligations. There exists always the contingent liability to make good the paper if it is not paid by the customer at maturity. This consideration, combined with the fact that customers' paper is to a large extent renewed, means that the bank must normally stand ready to take up the paper by making a new loan to the customer to replace the old loan held by the Federal reserve bank. Finally, possession of eligible paper alone does not absolutely guarantee that the bank can obtain cash. Not only must the paper be eligible, but it must also be acceptable to the Federal reserve bank. Since the acceptability is

⁵ In some instances state banks are allowed to satisfy part of their legal reserve requirements with holdings of government bonds.

partially based upon the member bank's indorsement, it follows that the Federal reserve bank may refuse to discount eligible paper for an overextended bank. Therefore, eligible customers' paper virtually resolves itself into a basis for borrowing at the Federal reserve bank rather than a source of permanent cash resources. To the extent that the banker's need for secondary reserve represents a temporary need for cash to tide over a seasonal need, there seems to be little reason for denying that eligible customers' paper can be classified as secondary reserve. Perhaps it would be correct to hold that an estimate of the secondary reserve needed to provide protection against contingencies other than regular seasonal needs should not include customers' eligible paper, while that part which is needed to provide for seasonal variation might well include such paper. This problem is still further complicated by the broadening of the basis of Federal reserve bank advances to member banks under Sec. 10b of the Federal Reserve Act.

Merits of different types of secondary reserves. A very practical problem confronts the banker who has determined the volume of secondary reserves needed. Which of the several possible forms should such assets take? This question can be answered only in the light of information regarding the safety, convenience, yield, and availability of the different forms.

Perhaps there is little choice between the several forms of secondary reserves on the grounds of safety of principal. Prime commercial paper, bankers' acceptances, and United States Government obligations all rank high in this regard. There has been some tendency to criticize call loans on this score, but regardless of the embarrassment which banks experienced with call loans during the time preceding the establishment of the Federal Reserve System, recent experience has been most favorable. During the stock market crash beginning in October, 1929, the interior banks were able to liquidate their call loans readily and without loss. This was made possible by the willingness and ability of the New York City banks to lend call money freely to replace the funds withdrawn by corporations and country banks at the first sign of disaster.⁶

⁶ During the week ending October 30, 1929, loans to brokers for out-of-town banks made by New York banks declined \$800,000,000, while the New York banks increased their own brokers' loans \$1,000,000,000. The Federal Reserve Bank of New York facilitated this action by discounting \$150,000,000 worth of paper for members and buying \$150,000,000 worth of United States Government securities in the open market. *Federal Reserve Bulletin*, November, 1929, p. 703.

It must be noted, however, that the liquidity of call loans in times of financial stress depends in large measure upon the willingness and ability of the New York banks to come to the rescue and "bail out" the other bankers who are anxious to call their loans. The ability of the New York banks to bring assistance is further conditioned by their ability in turn to obtain advances from the Federal Reserve Bank of New York. It is improbable that the Federal Reserve Bank of New York would willingly shut off the needed funds and allow a stock market crash to develop into a financial panic.

Some idea of the earnings which the banker may hope to realize on various forms of secondary reserve can be obtained from the New York City open-market rates. Table 8 shows such rates for the period 1926-1940.

TABLE 8
NEW YORK CITY OPEN-MARKET MONEY RATES

Date	Prime Commercial Paper	Prime Bankers' Accept- ances	U.S. Certifi- cates of Indebted- ness	Treasury Bills	Treasury Notes (3-5-yr.)	Treasury Bonds	Call Loans
1926.....	4.34	3.61	3.15	...	...	3.68	4.43
1927.....	4.11	3.45	3.10	...	...	3.34	4.05
1928.....	4.86	4.10	3.99	...	...	3.33	6.05
1929.....	5.85	5.03	4.42	...	...	3.60	7.61
1930.....	3.59	2.46	2.23	...	...	3.29	2.77
1931.....	2.63	1.59	...	1.402	...	3.34	1.74
1932.....	2.73	1.20	...	.879	...	3.68	2.65
1933.....	1.72	.60	...	.515	2.66	3.31	1.15
1934.....	1.02	.25	...	.256	2.12	3.12	1.00
1935.....	.76	.13	...	.137	1.29	2.79	.56
1936.....	.75	.15	...	.143	1.11	2.65	.96
1937.....	.95	.19	...	.447	1.40	2.68	1.90
1938.....	.81	.44	...	.053	.83	2.56	1.00
1939.....	.59	.44	...	.023	.59	2.36	1.00
1940.....	.56	.44	...	.014	.50	2.21	1.00

The volume of the various forms of paper appropriate for use as secondary reserve depends upon the state of business and the fiscal requirements of the government. It naturally follows that the banker's choice of secondary reserves is subject to limitation. The tremendous expansion of governmental funded debt during the First World War furnished an abundant supply of government bonds for investment by banks. The rapid growth of short-term government borrowing after 1932 has provided a huge volume of treasury bills, notes, and certificates of indebtedness, as shown in Table 9.

THE BANK'S SECONDARY RESERVES

TABLE 9

UNITED STATES GOVERNMENT INTEREST-BEARING DEBT *
(In Millions of Dollars)

<i>Date</i>	<i>Bonds</i>	<i>Notes</i>	<i>Bills</i>	<i>Certificates</i>
June, 1932	13,460	1,261	616	2,726
" 1933	13,417	4,548	959	2,108
" 1934	15,679	6,653	1,404	1,517
" 1935	14,019	10,023	2,053	....
1936	17,168	11,381	2,354	....
1937	19,936	10,617	2,303	....
1938	21,846	9,147	1,154	....
1939	25,218	7,243	1,308	....
1940	26,555	6,383	1,302	....
April, 1941	29,554	5,721	1,603	....

* As reported in the *Federal Reserve Bulletin*.

The variations in the volume of banker's acceptances and open-market commercial paper available for use as secondary reserves are illustrated in Table 10.

TABLE 10

COMMERCIAL PAPER AND BANKERS' ACCEPTANCES OUTSTANDING
(In Millions of Dollars)

<i>Date</i>	<i>Commercial Paper</i>	<i>Bankers' Acceptances*</i>
1925 Jan.	819	834
June	759	607
1926 Jan.	654	788
June	652	621
1927 Jan.	550	773
June	579	751
1928 Jan.	577	1,058
June	503	1,026
1929 Jan.	407	1,279
June	274	1,113
1930 Jan.	404	1,693
June	527	1,305
1931 Jan.	327	1,520
June	292	1,368
1932 Jan.	108	961
June	103	747
1933 Jan.	85	707
June	73	687
1934 Jan.	108	771
June	151	534
1935 Jan.	171	516
June	159	343
Jan.	178	334
June	169	331
1937 Jan.	244	337
June	285	364

TABLE 10—(Cont.)

<i>Date</i>	<i>Commercial Paper</i>	<i>Bankers' Acceptances</i>
1938 Jan.	299	326
June	251	268
1939 Jan.	195	255
June	181	245
1940 Jan.	219	229
June	224	206
1941 Jan.	232	213

In December, 1940, the total net deposits of the banks of the United States were \$65,021,000,000. At this time the combined volume of bankers' acceptances and open-market commercial paper outstanding was only \$445,000,000, or about .7 of 1 per cent of the total net deposits. Clearly, under these circumstances neither bankers' acceptances nor open-market commercial paper can provide any very substantial amount of secondary reserves for the banking system. This situation explains the present-day dependence upon short-term Treasury obligations as a source of bank liquidity.

CHAPTER XII

LOANS AND DISCOUNTS

AFTER proper provision has been made for secondary reserves adequate to care for all normal seasonal, cyclical, and irregular variations in deposits, plus some margin of safety, the remaining funds may properly be invested in assets which are less liquid. Such assets are of primary importance to the bank because they normally yield a higher rate of return than the highly liquid assets comprising the secondary reserve. Moreover, they are necessary to the economic life of the community in which the bank is situated, for local customers' loans normally fall into this category. Although part of these customers' loans are eligible for rediscount at the Federal reserve banks, a large part are for such periods of time and such purposes that they do not give rise to eligible paper. For example, somewhat less than one-fifth of the customers' loans of the "country" national banks on December 31, 1931, were eligible for rediscount.¹

Types of loans. The loans which the ordinary commercial bank makes to customers fall into two general classes: secured and unsecured. A secured loan is one in which the lender is protected not only by the general ability and willingness of the borrower to repay but also by the pledge of some salable asset which may be sold and of which the returns may be applied to the debt in case it is not paid when due. It follows that collateral given as security for such loans may take any number of several forms. The most common collateral used to secure bank loans consists of stocks and bonds. Another type, commodity collateral, is made up of documents of title to marketable goods: warehouse receipts, negotiable bills of lading, and trust receipts. A third type of collateral is made up of claims to personal and real property in the form of chattel and real estate mortgages. These three constitute the most important forms of collateral, but other types

¹ Estimated from data given in the *Annual Report of the Comptroller of the Currency*, 1932, p. 473.

are also in use. The cash surrender value of life insurance policies may be pledged as security for loans, as may notes receivable or, occasionally, accounts receivable.

The relative importance of customers' loans. Reference to Table 11 and Chart 4 will enable the reader to visualize the changes which have occurred in the relative importance of customers' loans and other loans since 1929. It is believed by many students of banking that commercial loans have experienced both a cyclical and a secular decline in relative importance among

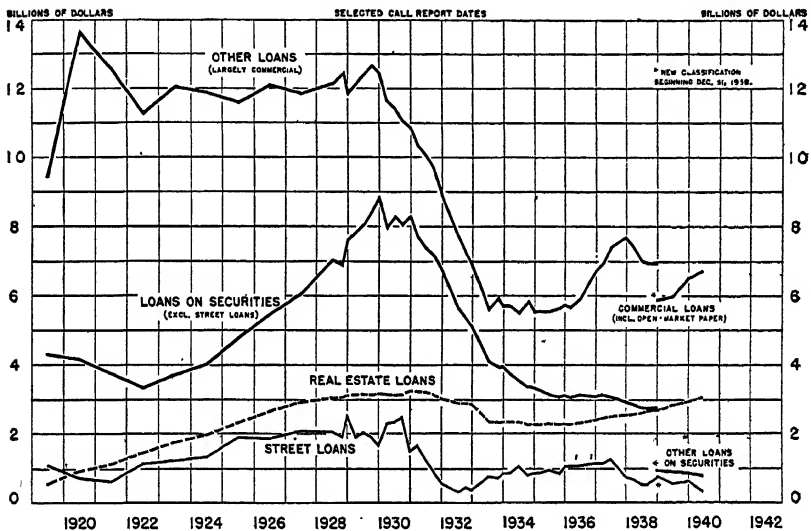


CHART 4. LOANS OF MEMBER BANKS. (Courtesy of the Board of Governors of the Federal Reserve System.)

the assets of banks. The explanation for this change rests first upon the shift which has occurred in the methods of business finance. The growth of large-scale business enterprises has tended to enable many firms to obtain permanent working capital economically by the sale of securities. They, therefore, no longer are in need of short-term bank loans. Further, during the boom period which ended in 1929, profits were plowed back into the business and provided an added source of financial resources during the depression. Finally, a tremendous expansion in the bond holdings of banks has appeared. This expansion resulted from: (a) the decline in the demand for commercial loans, (b) the excessively large volume of bank reserves, and (c) the bountiful supply of government obligations made available by deficit finan-

cing. In a way, the expansion in the banks' holdings of government securities tends to become self-perpetuating. The bank funds, created out of the purchase of government obligations by the banks, find their way into the coffers of business firms which benefit directly or indirectly from government spending. Thus, firms which normally might be in the market for bank loans are to some extent already supplied with adequate funds.

Loans on Stocks and Bonds

If savings banks are excluded, one may say that stocks and bonds furnish the most important type of collateral used to secure bank loans. On June 30, 1936, loans of all member banks secured by stocks and bonds amounted to \$4,208,000,000, as compared with loans secured by real estate amounting to \$2,340,000,000 and "other loans," including loans on other forms of collateral as well as unsecured loans, of \$5,858,000,000.²

Borrowers on stocks and bonds fall into three classes: (1) those borrowing to finance trading in securities, such as brokers, dealers, and speculators; (2) businessmen who find it desirable to borrow on collateral instead of upon their own unsecured notes for current business needs; and (3) consumer borrowers who have to finance some current need and have available collateral.

Loans for security trading. The borrowers who use funds to finance trading in securities are of two types. There is, first, the investment banking house, which borrows from commercial banks on the collateral of securities owned by the borrower and in process of being distributed into investors' hands. The amount of borrowing for such purposes varies with the location of the bank, the nature of its clientele, and the state of the investment market. The large city banker is called upon for such loans if current security flotations exceed the capacity of the investment bankers' own capital. The banks located outside of the financial centers have little, if any, loans of this kind.

Second, there is the numerically much more important class of borrowers composed of brokers and speculators. The magnitude of brokers' loans in general during times of acute speculation is shown by the fact that such loans were in excess of \$9,000,000,000 in October, 1929.³ At the end of 1930, when a large

² On December 31, 1929, loans on stocks and bonds were over \$10,000,000,000, as compared with \$3,191,000,000 in loans on real estate and \$12,000,000,000 in other loans.

³ "Operation of the National and Federal Reserve Banking Systems," *Hearings before a Subcommittee of the Committee on Banking and Currency, United States Senate*, 72d Cong., 1st sess., S. Res. 71, p. 1021.

TABLE 11

CLASSIFICATION OF MEMBER BANK LOANS, 1928-1940
(In Millions of Dollars)

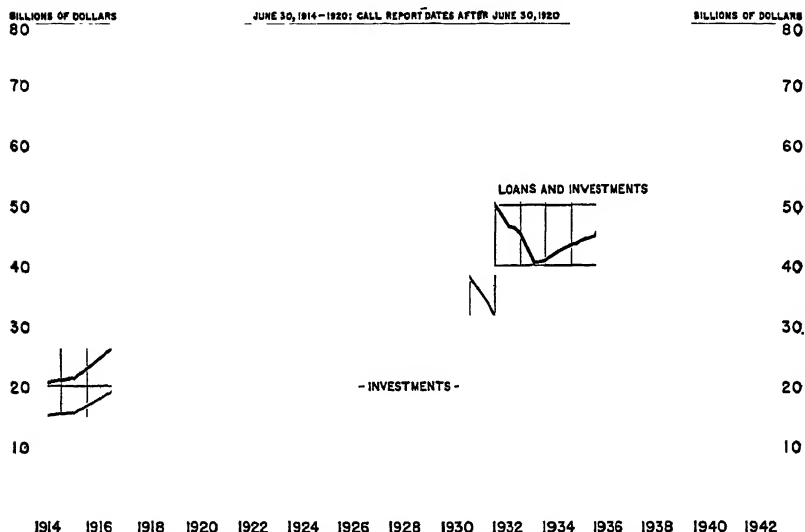
Date	Total Loans and Investments	Loans to Banks	Loans to Customers— Secured by Stocks and Bonds	Loans to Customers— Commercial and Industrial	Loans to Customers— Agricultural	Loans to Customers— Real Estate Loans	Loans to Customers— Other Loans	Loans for Purchasing or Carrying Securities— To Brokers and Dealers in Securities (New York)	Loans for Purchasing or Carrying Securities— To Others	Open-Market Paper	Investments
Dec. '28.....	35,684	538	7,348	.....	.....	3,123	10,991	2,556	.....	602	10,529
Dec. '29.....	35,934	714	8,488	.....	.....	3,191	11,515	1,660	.....	583	9,784
Dec. '30.....	34,860	631	7,941	.....	.....	3,234	9,831	1,498	.....	736	10,989
Dec. '31.....	30,575	790	6,290	.....	.....	3,037	8,242	575	.....	327	11,314
Dec. '32.....	27,469	444	4,849	.....	.....	2,861	6,195	357	.....	498	12,266
Dec. '33.....	25,222	287	3,772	.....	.....	2,359	5,185	846	.....	392	12,386
Dec. '34.....	28,150	155	3,297	.....	.....	2,274	4,940	843	.....	419	16,122
Dec. '35.....	29,985	98	3,089	.....	.....	2,284	5,170	1,047	.....	482	17,810
Dec. '36.....	33,000	85	3,051	.....	.....	2,405	6,172	1,144	.....	503	19,640
Dec. '37.....	31,752	70	2,964	.....	.....	2,547	6,996	738	.....	513	17,975
Dec. '38.....	32,070	125	.....	4,737	712	2,716	2,796 ^a	973	775	442	18,863
Dec. '39.....	33,941	56	.....	5,386	730	2,957	2,888	790	700	455	19,979
Dec. '40.....	37,126	43	.....	6,204	865	3,228	3,230	642	652	456	21,805

^a Beginning 1938, "Other Loans" is a residual item not comparable to the earlier classification of the same title.

reduction had taken place in brokers' loans, the percentage which brokers' loans were of all security loans for different types of member banks was as follows: ⁴

New York City banks	41%
Chicago banks	34
Banks in other reserve cities	14
Country banks	5

These figures indicate that banks of the large cities make a larger fraction of their security loans to brokers than do those of



smaller cities. The latter lend directly to customers on collateral, both for speculative and nonspeculative purposes.

Some idea of the distribution of security loans among the different types of borrowers may be obtained from analyzing the figures reported by banks in answer to questionnaires sent out by the Senate Subcommittee in charge of the hearings on S. Res. 71, 1931. At the end of 1930, the security loans for ten reporting New York City banks and twenty reporting banks located outside of the city were distributed as follows: ⁵

⁴ *Ibid.*, p. 1023.

⁵ *Ibid.*, p. 1012. These figures were computed from the answers of individual banks to a questionnaire submitted to them by the committee.

SECURITY LOANS

	<i>For Commercial, Industrial, and Agricultural Use</i>	<i>For the Sole Purpose of Carrying Securities</i>	<i>For Other Purposes</i>
New York City	19.1%	73.1%	7.8%
Outside New York City	18.0	74.4	7.6

In addition to making security loans to brokers, dealers, and others in order to finance the carrying of and speculating in stocks and bonds, banks frequently make such loans to individuals desiring to make investments. Such borrowers find it feasible to purchase more securities than they can pay for at the moment, borrowing the difference from the bank and using the purchased securities as collateral for the loan. Repayment is then made out of the borrower's income.

Commercial loans secured by stocks and bonds. Businessmen frequently find it desirable to use securities as collateral for loans intended for business purposes. Probably the banker prefers to obtain collateral for any loan. His ability to lend without collateral arises from the fact that his knowledge of the borrower's financial condition and general credit standing is quite complete. Complete knowledge requires long acquaintanceship, careful investigation, or both. The offering of suitable stocks-and-bonds collateral reduces the need for investigation of the credit standing of the borrower and smooths the way to the loan agreement. It is not surprising to find, therefore, that commercial loans sometimes appear as security loans. The figures appearing in the above table show that at the end of 1930, 19 per cent of all the security loans of New York City banks were really commercial in character, while 18 per cent of security loans of twenty banks in various parts of the country outside of New York City were commercial. The reasons for the use of collateral for commercial loans may be briefly summarized as follows:

1. The borrower may have a poor credit rating and must furnish collateral to get the loan.
2. The use of adequate security collateral may reduce the rate of interest charged by the bank.
3. The use of collateral may increase the size of the loan available by avoiding the legal restrictions on size of loans to one borrower. For example, loans secured by United States obligations are subject to a limitation of 15 per cent of the bank's cap-

ital and surplus, in addition to the 10 per cent limit on loans to one individual or firm.⁶

Although the problem of analyzing the borrower's credit standing is avoided in cases of properly margined security loans, such loans present certain other problems. The collateral offered must be marketable and of a value sufficiently above the amount of the loan to assure the bank that it will not be caught in a falling market. The collateral, in turn, must be regularly and carefully scrutinized and any decline in the margin of market value of the securities over the face of the loan be promptly made up. This task is assumed by the New York City banks in making loans for their country correspondents on the stock exchange. Before 1929 they normally made a charge for their services of 5 per cent of the interest earned. During that year, while the Federal Reserve Board was attempting to slow down the speculative tempo of the stock market, the commission charged for such loans was changed to $\frac{1}{2}$ per cent per annum.⁷ Adequate margins are more likely to be maintained against brokers' loans than against collateral loans to customers. Since the broker is liable for the repayment of funds advanced to speculators, he is more likely to be prompt and insistent in demanding proper additions to collateral than will be the bank in dealing with its own customers. Hence it may be said that, other things being equal, brokers' loans are the safest of all collateral loans to finance trading in speculative securities. On the other extreme have been loans to security company affiliates engaged in underwriting security issues. Naturally, the bank is tempted to be dangerously easy-going in its attitude toward the margin requirements of such loans. If the collateral offered by the borrower is not easily marketable, but consists of securities of local enterprises, the banker must consider not only the soundness of the collateral but also the credit standing and ability of the borrower to repay; otherwise the bank may easily find itself an unwilling participant in the ownership of local enterprises.

Below is a copy of the general collateral agreement signed by those making security loans with the Bankers Trust Company of New York.⁸

⁶ *Revised Statutes*, Section 5200.

⁷ During the depression, the charge was lowered to $\frac{1}{4}$ per cent per annum, but later became $\frac{1}{2}$ per cent again. *New York Times*, October 26, 1935.

⁸ "Stock Exchange Practices," *Hearings before the Committee on Banking and Currency, United States Senate*, 72d Cong., S. Res. 84, Appendix to Pts. 1, 2, and 3, pp. 134-135.

LIABILITY AGREEMENT

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, in consideration of financial accommodations given or to be given or continued to the undersigned by or through Bankers Trust Co., of the city of New York (hereinafter, whether referred to as agent or otherwise, being called the "company"), hereby agrees with the company, for its own account and as agent for every other person to whom, and firm or corporation, to which the undersigned is or may become indebted by reason of any transaction through the company as such agent or by reason of any assignment by the company of all or any part of any indebtedness of the undersigned, that whenever the undersigned shall become or remain directly or contingently so indebted in any manner whatsoever, the company shall then and thereafter, for its own account and as agent for each such other creditor, have the following rights in addition to those created by the circumstances from which such indebtedness may arise, against the undersigned or the executors, administrators, successors, and assigns of the undersigned, namely:

1. All securities now or hereafter deposited by or for the account of the undersigned with the company as collateral to any such loan or indebtedness of the undersigned to the company and/or other creditor, shall also be held by the company as security for any other such liability or liabilities of the undersigned, whether existing or thereafter contracted or existing, due or to become due, or to be held by the company for its own account and/or as agent, and the company shall also have a lien upon any balance of the deposit account of the undersigned with the company existing from time to time, and upon all property and securities of every description now or hereafter given unto, or left in the possession or custody of the company for safekeeping or otherwise, by or for the account of the undersigned or in which the undersigned may have any interest (all remittances and property to be deemed left with the company as soon as put in transit to it by mail or carrier) as security for any such liability or liabilities.

2. The undersigned shall deliver to the company additional collateral satisfactory to it whenever called for by it, so that there will at all times be with the company a margin of security satisfactory to it for all such liabilities of the undersigned now existing or which may hereafter be contracted or existing, due or to become due, or held, or to be held by the company for its own account and/or as agent, and in case of failure so to do forthwith all such liabilities of the undersigned shall become at once due and payable at the option of the company, notwithstanding any credit or time allowed to the undersigned by any instrument evidencing any of the said liabilities or otherwise.

3. The company is hereby authorized and empowered at its option at any time and from time to time to appropriate and apply to the payment and extinguishment of any such liabilities of the undersigned, whether or not existing or hereafter contracted, any and all moneys or other property or proceeds thereof now or hereafter in the hands of the company on deposit or otherwise, for the account of, to the credit of, or belonging to the undersigned, whether such liabilities are then due or not due. In the event of the insolvency of, or the appointment of a receiver of the property of, or an assignment for the benefit of creditors of, the undersigned, or the filing by the undersigned of a voluntary petition in bankruptcy, or the filing of an involuntary petition in

bankruptcy against the undersigned, or any attachment against the credit or property of the undersigned with the company, all such liabilities of the undersigned shall, at the option of the company, become and be immediately due and payable without demand of payment.

4. Upon failure of the undersigned either to pay any indebtedness to the company and/or to any other creditor when becoming or made due, or to keep up the margin of collateral securities above provided for, then, and in either event the company is authorized immediately to sell, assign, and deliver the whole of said securities so held by it, or from time to time any part thereof, or any substitutes therefor, or any additions therefor, or any additions thereto at any brokers' board, or at public or private sale, for cash, upon credit, or for future delivery, all at the option of the company, without either advertisement or notice, which are hereby expressly waived, and to apply the net proceeds thereof to one or more or all of such liabilities of the undersigned, whether then due or not. Upon any sale or sales at public auction or brokers' board, or exchange above provided for, the company may bid for and/or purchase the whole or any part of said securities or property, free from any right of redemption, which is hereby waived and released.

5. All securities deposited by the undersigned with the company as collateral to any such liabilities of the undersigned may be pledged by the company, either alone or mingled with other securities, to the United States or to the Federal reserve bank, to secure deposits or other obligations of the company, whether or not such liability of the company be in excess of such liabilities of the undersigned.

6. Calls for collateral or any notices to the undersigned may be made or given by the company by leaving or mailing same to the address given below or the last known address of the undersigned, with the same effect as if delivered to the undersigned in person.

It is further agreed that these presents constitute a continuous agreement, applying to any and all future as well as to existing transactions between the undersigned and the company for its own account and/or the account of any other person, firm, or corporation.

Dated, New York, N. Y., day of, 19...

Address

Witness:

Loans on Commodity Collateral

For reasons similar to those which make borrowing on stocks and bonds advantageous to businessmen and firms which are in a position to utilize them, it is frequently desirable for borrowers to furnish commodity collateral. The extent of the use of such collateral can be seen from Table 12.

Basic commodities used as collateral. Although commodity collateral generally consists of warehouse receipts, bills of lading, or trust receipts, the underlying commodities are of great variety. Originally they included only such staples as grain, cotton, wool, and meat produce, which were easily graded and stored. With

TABLE 12

LOANS OF NATIONAL BANKS SECURED BY PERSONAL SECURITIES OTHER THAN
STOCKS AND BONDS, AND INCLUDING MERCHANDISE,
WAREHOUSE RECEIPTS, ETC.*

(In Thousands of Dollars)

June 30, 1915	.. . . .	\$882,752	or	13.5% of total loans
"	1916	884,977		11.5
"	1917	1,073,842		11.9
"	1918	1,260,122		12.4
"	1919	1,331,359		12.5
"	1920	1,782,399		13.9
"	1921	1,662,717		13.8
"	1922	1,383,017		12.2
"	1923	1,387,363		11.7
"	1924	1,350,764		11.2
"	1925	1,363,316		10.7
"	1926	1,458,026		10.8

* *Report of the Comptroller of the Currency, 1926, p. 405.* The above figures do not represent exactly the volume of loans secured by commodities, since other personal security is included. However, the bulk is commodity collateral. Later reports are not in such form as to permit the segregation of loans of this type.

the modern improvements in the art of cold storage, a vast array of commodities can be stored, and the warehouse receipts against them may appear as collateral for bank loans. We now have grain in elevators, whiskey, tobacco, silks, tea, cotton, butter, eggs, fruits of all kinds, raisins, nuts, vegetables, fish, wool, carpets, and rugs, to mention a few of the types used.⁹ To make the use of warehouse receipts more available to manufacturers and other businessmen who are unable to put their staple raw materials in storage in some bonded warehouse located elsewhere than the borrower's place of business, public warehousemen are now employing field or branch warehouses at the plant of the manufacturer. Complete custody of commodities used for collateral for loans is given to these branch warehouses.¹⁰

Problems of commodity collateral. Like loans secured by stocks and bonds, commodity collateral loans present the problems of marketability and value. If the underlying commodities are regularly traded in on organized exchanges, there is the advantage of assured marketability as well as opportunity to keep close check upon changes in market value. But many commodities on which warehouse receipts are issued and offered as col-

⁹ Phillips, Chester A., *Bank Credit*, New York, The Macmillan Co., 1920, p. 227.

¹⁰ Gibson, A. T., "Warehouse Receipts," *American Bankers Association Journal*, October, 1932, Vol. 25, p. 27. See also "Field Warehouse Receipts," *Federal Reserve Bulletin*, June, 1937, pp. 513-521.

lateral for banks are not dealt in on regular exchanges. Their marketability depends, often, upon a relatively narrow range of buyers. Under such circumstances, the lending banker must rely not only upon a wide margin of collateral but also upon the borrower's general credit standing and the probability that the collateral will in due time be turned into income. Although not so satisfactory as a loan on more staple articles, loans on the less marketable forms of commodity collateral have an obvious advantage over unsecured loans in that they give the lender a prior claim on certain specific valuable assets in case of bankruptcy. Collateral notes of all kinds ordinarily contain a power of sale in case of default or bankruptcy. Loans on warehouse receipts are preferable to loans on chattel mortgages because of the greater convenience and lack of legal procedure involved in realizing on the collateral.

Bills of lading. The three basic types of documents which bankers receive as security for loans are (1) bills of lading, (2) warehouse receipts, and (3) trust receipts. Bills of lading are of two sorts. The so-called "straight" bill of lading calls for the delivery of goods by the carrier to a designated consignee. When goods are shipped under a straight bill of lading, the carrier discharges its obligation by delivery to the consignee, and may properly do so regardless of whether or not the consignee has the bill of lading. This type of bill of lading, therefore, is valueless as security for loans, since its possession by the bank does not carry with it the right to take possession of the goods from the carrier. The order or negotiable bill of lading, however, is a document of title upon which a bank may safely lend, for such a bill, properly indorsed, gives the holder the right to take possession of the goods.

The value of a bill of lading as collateral for loans is, of course, dependent upon the value of the commodity in shipment. There is the risk that the "shipper's count," relied on by the carrier, may be inflated or that the goods may be of inferior quality. Finally, there is the possibility that the shipper's title to the goods may be defective or that the individual pledging the bill of lading may not have title to it. The latter problem is simplified somewhat by the provisions of the Federal law which provides that order bills of lading arising in interstate commerce may be negotiated by any person having possession, however acquired, if the goods are deliverable to the order of that person or if the bill of lading has been indorsed in blank.

Warehouse receipts. A negotiable warehouse receipt issued by a responsible, bonded warehouseman may provide high-class security for bank loans. The safety of such loans cannot be left to chance but requires that the lender assure himself on the following points:

1. The suitability of the warehouse or storage facilities.
2. The responsibility and competency of the warehouseman.
3. That the receipt contains information which provides an honest, impartial, and comprehensive description of the commodity.
4. That the terms of the warehouse receipt are such as to safeguard the lender.
5. That there is bonded responsibility behind the receipt, with the bond in such form that it can be realized on by the holder of the receipt.
6. That there exists a bona fide relationship of bailor and bailee between the storer and the warehouseman under which the latter and his representatives or his local custodians are completely and wholly independent of the storer. This last point is especially important in the case of field warehousing.

To improve the quality and security of warehouse receipts and to clarify and standardize their use, the Uniform Warehouse Receipts Act has been adopted by 46 states,¹¹ and the United States Warehouse Receipts Act has been enacted by the Federal Government. To insure honest grading and financial responsibility on the part of warehousemen of agricultural products, the Secretary of Agriculture may license warehousemen of agricultural products and require that they be satisfactorily bonded to the United States Government. Any person injured by the default of the warehouseman may sue in his own name on the bond. To improve the protection afforded to holders of warehouse receipts, the Uniform Warehouse Receipts Act provides that the validity of the negotiation of a warehouse receipt shall not be impaired by the fact that (1) it was a breach of duty on the part of the person making the negotiation or (2) the owner of the receipt was induced by fraud, mistake, or duress to entrust its possession to the person negotiating it, provided the buyer acted in good faith. Further, although holders of warehouse receipts are subject to all previously recorded liens and have no recourse in such

¹¹ *An Introduction to Field Warehousing*, 1941, Bank Management Commission, American Bankers Association.

a case against the warehouseman who issues the receipt in good faith, the Warehouse Receipts Act provides that the depositor of the goods subject to a lien, negotiating the warehouse receipt for value with intent to deceive and without disclosing the lien, is punishable by fine and imprisonment.

A relatively important development has occurred in the last decade in the form of field warehousing.¹² Field warehousing differs from ordinary warehousing in that it involves the use of the warehouses belonging to the borrower instead of those belonging to an independent warehouseman. In order that warehouse receipts issued against goods stored in the borrower's own warehouse may be of use as collateral for a loan by the bank, it is necessary that the warehouse be completely removed from the custody of the borrower and be transferred to the custody of an independent warehouseman. To accomplish this, the warehouse in which the goods are stored is leased by the independent warehouseman, who takes over sole possession and places conspicuous notices on the warehouse to notify the public that goods contained therein are subject to warehouse receipts which are probably pledged. To be acceptable collateral, the receipts must be issued by a clearly independent individual or firm regularly engaged in warehousing. It is the general practice for field warehousing companies to hire one or more persons employed by the storer to act as custodians. The best arrangement is one in which the custodian is wholly employed by the warehouseman, although instances occur where the warehouseman pays only part of the custodian's wages.

Field warehousing offers decided advantages to both borrowers and lenders. In many lines, borrowers' only commodity collateral comprises inventory which cannot conveniently be placed in a public warehouse. The field warehouse plan, properly executed, enables such borrowers to offer banks collateral which otherwise would be unavailable. Not only is the borrower's credit position somewhat enhanced, but also the bankers obtain the benefit of a better loan outlet. The growth of field warehousing has done much to expand the use of commodity collateral for bank loans. Such widely different commodities as apples, automobiles, beer (in vats), brass, paper boxes, peanuts, railroad ties, rubber tires, tin plate, and washing machines, to name but a few, have been used as the basis for loans on field warehouse re-

¹² Cf. *An Introduction to Field Warehousing*, 1941, American Bankers' Association.

ceipts. Raw materials and finished products only are favored for field warehousing. Difficulties in maintaining proper control over goods in process make their use unsatisfactory.

Trust receipt. Finally, there is the trust receipt, a document frequently used to protect the bank when it becomes necessary to release the goods called for by the warehouse receipt or bill of lading in order that the borrower may utilize or dispose of them. At such a time, the borrower signs a "trust receipt," which acknowledges the receipt of the goods and states the use to be made of them. The borrower agrees to hold the goods in trust for the bank and on their disposal to deliver the proceeds to the bank. As far as the borrower is concerned, the trust receipt is an effective instrument for the protection of the banker. The courts have no difficulty in finding that, as between the two, the banker is entitled to possession of either the goods or the proceeds. Any action of the debtor in violation of his agreement in the trust receipt would make him liable to the banker as well as answerable to the state for misapplication of funds. However, in case the debtor has disposed of the goods and at the same time is insolvent, the banker cannot retake the goods from an innocent buyer.¹³

The Unsecured Loan

A great number of business firms do not include in their inventory many, if any, commodities which can be put into independent warehouses and used as collateral. As a result, they are unable to offer commodity collateral as security for bank loans, yet normally such firms are not supplied with stocks and bonds for use as collateral. A large part of commercial loans, therefore, must be made without the pledge of any specific collateral. The relative importance of unsecured bank loans is shown in Table 11 on page 153.

Trade paper. One type of unsecured loan takes the form of discounted or purchased trade paper owned by the borrower. Such paper consists of trade acceptances and promissory notes. By his indorsement the borrower assumes a contingent liability to pay the instrument on notice of dishonor by the primary obligor on proper presentment. Trade paper thus bears two signatures and is designated *two-name* paper. The discounting

¹³ Spencer, William H., *Textbook on Law and Business*, University of Chicago Press, 1929, p. 733. Edwards, George W., *Principles of Banking and Finance*, New York, Ronald Press Co., 1932, pp. 63-64.

bank, therefore, gets the specific promise of the buyer of goods, in addition to the indorsement of the seller-borrower. The selling and credit policies of American business are such that two-name paper of this kind is relatively scarce. Although at one time a common practice, the sale of goods on credit by the use of notes receivable is now confined to the selling of such things as lumber, jewelry, pianos, plumbers' supplies, and agricultural implements.¹⁴ Likewise, the trade acceptance is used but little, most firms preferring for one reason or another to stick to the usual method of selling on open account. This has been true in spite of the efforts of the Federal Reserve Board to promote its use by granting it a preferential rediscount rate during the early years of the Federal Reserve System.

The trade acceptance. The use of the trade acceptance has been the subject of considerable debate. Its champions hold that its use would be of advantage to the buyers and sellers of merchandise as well as to the bank called upon to finance the transactions. A good account of the several viewpoints on the subject is given by the Federal Reserve Bank of Richmond in its letter on "Trade Acceptances," a quotation from which is given below.¹⁵

CHANGES IN PRACTICE INVOLVED IN THE USE OF THE TRADE ACCEPTANCE

Before passing to the consideration of the advantages and disadvantages of the use of the trade acceptance which were urged in the campaign to which we have already referred, the student should have clearly in mind a picture of previous (and to a large extent present) practices in this country as contrasted with the proposed practice.

When a manufacturer or wholesale dealer sells to a jobber or retail dealer, the goods are usually shipped on open bills of lading, and the account of the buyer is charged on the books of the seller at the agreed prices, less the trade discount, if such a discount is allowed. At or about the time of the sale (or possibly the shipment) the seller sends to the buyer an itemized invoice of the goods, and upon this invoice is written, or printed the terms of the sale. That is to say, the invoice shows the length of time in which the buyer has to pay and the cash discount which will be allowed by the seller if payment is made within a shorter time (frequently ten days). The claim remains an open account on the books of the seller until it falls due and is paid by the buyer, whose duty it is to remit at the maturity of the account, unless, of course, the buyer anticipates this maturity by remitting (less the cash discount) on or before the discount date named in the invoice.

If in the meantime the seller finds it necessary to borrow money with which to meet his obligations, he goes to his bank, presents a note for the amount he wishes to obtain, and borrows from the bank on the strength of his state-

¹⁴ Phillips, *op. cit.*, p. 169.

¹⁵ Quoted with the permission of the Federal Reserve Bank of Richmond, from "Trade Acceptances," *Letter No. 11*, 1923.

ment of assets and liabilities, including among his assets his customers' unpaid accounts (accounts receivable), which accounts are made up of sales some of which have matured and some of which have not.

In case the trade acceptance plan is made use of, the sale and shipment will be made in exactly the same way. The invoice will be sent as usual to the purchaser, but with it would go a draft drawn on the purchaser by the seller dated on the day of sale (or the day of shipment) and payable one, two, three, or four months after date, according to the terms of the sale. The invoice could indicate the discount terms just as in the former case, but the purchaser would be requested to accept the draft by writing his name across the face of it and to return it to the seller, unless he should decide to take advantage of the cash discount terms and remit for the net amount of the bill within the time (frequently ten days) specified. In such a case he would of course destroy the draft or return it without acceptance to the seller. It is manifest that in this case the seller instead of having an open account against the purchaser would hold an accepted draft. It is also manifest that in going to his bank for a loan, he could give it one or more of these accepted drafts, instead of executing his own note for the amount he wished to borrow. It is also manifest that in discounting these acceptances (instead of the note of the seller), the bank would have the security of two names instead of one.

* * * * *

THE TRADE ACCEPTANCE FROM THE STANDPOINT OF THE BANKER— ADVANTAGES

1st—In discounting trade acceptances for the seller, instead of his single-name paper, the banker will obtain two names instead of one.

2nd—Not only will the banker obtain the added security of a second name, but the borrower who uses trade acceptances with his banker, instead of his own note issued on the strength of his statement of assets and liabilities, is not in a position to hypothecate his open accounts to some one else, because his open accounts have been merged in the trade acceptances upon which he borrows directly.

3rd—The banker who discounts trade acceptances for his customers is in a position to pass judgment upon the credit risks taken by his customers in selling goods on time.

4th—In any case in which the banker's customer is not strong in himself, the banker can minimize the risk by selecting the acceptances of reliable customers of his customer, and in this way he can afford to extend a more liberal line of credit than would be justifiable on the general credit of his customer as shown by the customer's statement.

5th—In making advances to customers on trade acceptances the banker can assure himself that the advances are being used by his customer exclusively in the customer's business. He can therefore afford to extend a more liberal line of credit during his customer's full season, knowing that the line (represented by trade acceptances) will automatically decrease with the ebb-tide of the customer's business. Other things being equal, the prudent banker is always willing to extend a much larger line of credit to a borrower who periodically pays out entirely than to another borrower who is indebted to the bank the year around.

CHAPTER XIII

LOANS AND DISCOUNTS

(CONTINUED)

Accommodation paper. Another form of unsecured loan is that involving accommodation signers and indorsers. The borrower obtains the signature or indorsement of another person as a means of bolstering up his own credit. Such paper results from the indorsement of corporation notes by officers and directors, as well as from the indorsement of the notes of individuals of inadequate credit.

Single-name paper. Finally, there is the single-name unsecured note, which looms large among bank loans. The use of single-name paper arises from the American habit of making credit sales on open account with a heavy discount offered for cash. The heavy cash discount obtainable for payment within ten days furnishes an inducement to the buyer to pay cash, if it is at all possible. If he possesses insufficient funds of his own, and his credit standing is sufficiently good, he will borrow on his unsecured note from his local banker. On the other hand, if the buyer is unable to pay cash but waits until the expiration of the full credit period to pay, the seller will obtain funds by borrowing at his bank on his unsecured notes. Thus, in either event, banks will be called upon to finance the transaction on single-name unsecured notes.

In order that a banker may make unsecured loans safely, it is essential that he have complete and accurate information as to the borrower's credit. The methods used in acquiring such information are varied. The small-town banker tends to rely upon his general acquaintance with the borrower's affairs, supplemented by specific personal inquiries. Larger banks find it impossible to rely upon haphazard credit information and develop more or less elaborate credit departments whose function it is to gather and record credit information about customers and pro-

spective borrowers.¹ The multiplicity of their borrowers, the greater difficulty of measuring the credit standing of complex and large-scale firms, the size of the accommodation required—all make necessary a more complete and orderly assemblage of information than could be had with less formal methods of collection. Moreover, large city banks are frequently called upon by their country correspondents to supply credit information about open-market borrowers.²

Borrowers' statements. Credit information of the more formal sort may be obtained from a variety of sources. There are available for banks as well as others the services of the well-known credit-rating agencies, such as Dun and Bradstreet. There is also the method of direct inquiry from the business houses which have dealings with the individual or firm whose credit standing is being examined. If the borrower has borrowed before at the bank, his record there is available. Finally, there is the direct inquiry from applicants for loans. Foremost in such an inquiry is a request for a statement of assets and liabilities (or balance sheet) and an income statement, preferably certified by a certified public accountant. Supplementing these will be specific inquiries bearing on the borrower's business affairs.

The use of the borrower's statement of assets and liabilities received impetus through the rise of credit departments³ and was further stimulated by the former requirement that member banks, when applying for rediscounts, should certify that statements were on file for all borrowers whose paper was offered for rediscount (except in the case of loans to depositors secured by commodities or United States obligations, or amounting to less than 10 per cent of the bank's paid-in capital and less than \$5,000). Since unsecured commercial loans are made for a relatively short period of time, the banker is vitally concerned with the relation of the borrower's current income to his liabilities. Only when his probable income shows a satisfactory margin over his liabilities, including the proposed loan, will the banker be justified in lending without security. A careful analysis of the borrower's statements will give the desired information. The

¹ Phillips states that the establishment of credit departments in banks began about 1890. It was after 1900 that their use became common. *Bank Credit*, New York, The Macmillan Co., 1920, pp. 144-147. See also Prendergast, Wm. A., and Steiner, Wm. H., *Credit and Its Uses*, New York, D. Appleton-Century Co., 1931, p. 93.

² Phillips, *op. cit.*, p. 148.

³ *Ibid.*, pp. 145-146.

items of the balance sheet of most interest to the banker are the current assets and the current liabilities.

<i>Current Assets</i>	<i>Current Liabilities</i>
Cash	Accounts payable
Accounts and notes receivable	Notes payable
Inventory, made up of:	Accrued interest on long-time debt
Raw materials	Any long-time debt nearing maturity
Finished goods	Accrued expenses
Goods in process	

The ratio of current assets to current liabilities, called, for convenience, the "current ratio," should show a satisfactory margin of assets over liabilities. What the margin should be in practice depends primarily upon the quality of the current assets and the degree of regularity of income and outgo. The quality of the current assets depends, among other things, upon the following conditions:

1. The general state of business, whether normal or dangerously inflated. This has a direct bearing upon both the marketability of the inventory and the ability to collect the accounts receivable.

2. The freshness of the accounts receivable. If any substantial proportion represent past-due, slow, and uncertain accounts, their value must be discounted. This may be discovered by comparing the volume of accounts receivable with the volume of sales during the normal credit period just preceding. Since some buyers take cash discounts, the accounts receivable should be less rather than more than the sales for the period.

3. The marketability of the inventory. This is indicated by comparing the present rate of inventory turnover with (1) the past experience of the company and (2) the experience of other firms of a similar type. Further, the marketability is affected by the degree to which the product is a staple, subject to a continuous demand. Not only will the banker rely upon an analysis of the borrower's statements as a means of discovering the true worth of the assets, but he must also check carefully, insofar as possible, on the accuracy of the statements themselves. This may involve an audit of the borrower's accounts either by certified public accountants or by representatives of the bank.

While the banker relies heavily upon the current ratio of the borrower in order to assure repayment of the loan when due, he cannot afford to disregard the question of the long-time solvency of the firm as evidenced by an adequate stockholders' equity.

This may not appear so important in the case of short-time loans which are intended to tide the borrower over a seasonal peak. In such cases sufficient protection is afforded by the current assets. But the tendency among some borrowers continuously to obtain part of their working capital from banks alters the situation. In such instances the borrower relies upon his renewing the loan at maturity or, at best, cleaning up his loan at one bank by borrowing at another or in the open market. It is obvious that in such a case the question of the ultimate solvency of the borrower becomes a vital one, for upon it rests his ability either to pay the loan or to shift it to other banks.

The line of credit. In the event that the customer wishes to borrow at intervals during any given season, it is frequently more convenient both for him and for the bank to make an analysis of his credit and to establish a maximum line of credit which the bank is willing to extend. Thereafter, so long as there is no material alteration in the borrower's condition, he may borrow at any time, without investigation, up to the amount of his credit line. The line of credit imposes no legal obligation upon the bank. It is merely an expression of willingness to lend up to a certain amount if the borrower's credit standing is not impaired and if the bank is in a position to lend at the time when the customer wishes to borrow. Not only does the bank not assume any legal liability to lend, but the customer in no way obligates himself to borrow any or all of the line extended to him. However, the bank incurs a moral obligation to keep open the line if the customer carefully preserves his credit standing, and it could hardly afford to violate the confidence of a valuable customer. If necessary, it may rediscount or borrow funds required to care for the customer's needs. Lines of credit are extended not only to business houses but to correspondent banks as well. Non-member banks which experience heavy seasonal drains of cash frequently resort to their city correspondent for loans. These loans may be either secured or unsecured.

Banks usually make two requirements of customers for whom they extend a credit line. First, the customer may be expected to clean up his loans at least once a year. This is designed to indicate that the borrower is obtaining funds to care for a seasonal peak in his business. After the need is past, he will pay off his loans. The bank's loans are, therefore, self-liquidating in character. The continuous borrowers, however, can conform to this rule only by borrowing elsewhere in order to pay off the original lending bank. Although loans of this kind are not

strictly self-liquidating merely because they are paid off, the bank has the advantage of compelling the borrower to subject his affairs periodically to the scrutiny of other bankers.

A second requirement commonly made by commercial banks in extending a line of credit is that the customer shall maintain a certain fractional part of the line on deposit with the bank during the life of the credit. This rule is by no means uniformly applied. It is more commonly insisted on in the larger money centers, but is a well-established principle among practical bankers, whether or not actually adhered to.⁴ A variation of the same principle appears in the form of a requirement that a borrowing customer shall maintain a certain fraction of his total loans on deposit during the life of the loan. Still another variation is that any loans made may be only a certain multiple of the average deposit balances carried by the borrower during some preceding period. Some form of the average balance requirement is in common use, particularly among metropolitan bankers. Nearly 85 per cent of 206 commercial banks located in various clearing house cities engage in the practice. They require from 10 to 20 per cent of an unsecured loan and somewhat less for the secured.⁵

Bankers give several reasons for the "compensating balance" rule. The most frequent reason assigned is that, since a bank cannot lend without deposits, those desiring loans should be required to be depositors also. To this general reason may be added the more specific ones that an adequate balance should be carried by the borrower: (1) to insure the liquidity of his own position and the safety of his business; (2) to reduce the risk to the bank of extending credit; and (3) to make the customer's account profitable to the bank.⁶ Some bankers hold that the maintenance of an adequate balance is the insurance of a supply of credit in times of need. Indeed, it appears that country banks expecting accommodation from their city correspondents carefully maintain their balances with this in mind.⁷

Perhaps the best justification for the practice is that it seems

⁴ Phillips says that many city banks require borrowers to maintain average balances equal to 20 per cent of the maximum credit extended, while country banks make no such requirement. *Op. cit.*, p. 42.

⁵ Whipple, Howard, "The Average Balance Theory: Is it Justified?" *American Bankers Association Journal*, May, 1931, p. 902. Also, for a statement that most banks apply the 15 per cent or 20 per cent compensating balance rule, see Hand, John A., "Compensating Balances Should Be Required," *Bankers Magazine*, January, 1932, p. 43.

⁶ Hand, *op. cit.*, p. 42.

⁷ Whipple, *op. cit.*, pp. 902, 938.

to be profitable to the banks. No doubt it influences to some extent the size of deposit balances carried by customers who expect to borrow from the bank. When applied in the form of limiting loans to some multiple of balances carried in the past, it puts pressure upon borrowers to maintain their deposits constantly at a larger figure than otherwise. This gives the banker more loanable funds, other things being equal, than he would otherwise have. On the other hand, if the rule applied requires a borrower to keep an average deposit equal to 15 or 20 per cent of the loan during its life, it tends to require him to borrow more than he really needs. In either application of the rule, the customer *may* be required to carry an abnormally large balance before or during the life of the loan. If so, it has the effect of increasing the cost of the loan. The compensating balance, therefore, results in an overcharge on the part of the bank for the purpose of increasing the bank's income.⁸

The rule has been severely criticized on the grounds that it is illogical, since it is blindly adhered to as a matter of habit, and unfair, since it is not consistently enforced against the stronger borrowers but falls most heavily on the small and weak who, because of their inferior position, are dependent upon a single bank.⁹ Naturally loans or investments made by a banker in the open market cannot give rise to any required balances. This is justified, however, on the grounds that such purchases and loans are made out of surplus funds at times when the bank is not in need of deposits.¹⁰

The extension of credit by banks was criticized during the depression (1930 to 1933) on the grounds that solvent borrowers were unable to obtain adequate loans. This situation arose in large part from the frantic efforts of banks to fortify themselves against runs by maintaining a high degree of liquidity. Some critics, however, hold that the banks have been using faulty and antiquated methods of credit analysis. More particularly, they contend that bankers have put too much emphasis upon current ratios and too little upon the long-run financial record of the concern as indicated by a satisfactory, growing owners' equity. They criticize the weight given to past records of deposit balances

⁸ *Ibid.*, p. 938. Bradford believes that in practice borrowers carry deposits little, if any, larger than would normally be carried in the absence of the rule. See Bradford, Frederick A., *Banking*, 1932, first edition, pp. 254-256. Insofar as the practice increases the cost of loans, it enables banks to evade usury laws.

⁹ Whipple, *op. cit.*

¹⁰ Hand, *op. cit.*

of applicants for loans. They contend that the banker should become more familiar not only with the production technique and marketing programs, but also with the trend of the borrower's industry as a whole and its relation to other industries.¹¹

The Maturity of Commercial Bank Loans

Short-term loans. Traditional opinion has always held that commercial bank loans should be of short maturities and self-liquidating in character. In theory, at least, this position was justified on the basis of the nature of commercial bank liabilities in the form of demand deposits. Short-term, self-liquidating loans provide the short-period liquidity so necessary to meet the requirements of demand deposit banking.¹² A practical reason for the belief in the importance of short-term loans for commercial banks rests upon experience. The English commercial banks have always been largely occupied with the financing of trade and commerce. American banking practices have to some extent followed the pattern of the English system with emphasis upon short-term loans to business. In spite of this adherence to the principle of short-term loans, bankers have been faced with the fact that many of their customers require working capital for periods longer than the three months—generally considered the longest maturities appropriate for commercial loans. In actual practice, therefore, banks have made three-months loans with the understanding that they might be renewed so long as the borrower's credit position remained favorable.

Developments during the last decade have led to a re-examination of this rule that commercial banks should limit themselves to short-term commercial loans. First, modern business, operating on a large scale and fortified with ample working capital through security issues, finds it unnecessary to depend upon short-term loans to anything like the extent required by business in previous years. The bankers, therefore, have seen the short-term loan demand drop away sharply. Second, as a result of the depression, many meritorious borrowers have found themselves with their supply of longer-term working capital seriously depleted. This has been an especially serious problem for many

¹¹ Criticisms of the credit analysis methods of banks made by business firms experiencing no bank credit difficulty. National Industrial Conference Board, *Availability of Bank Credit*, 1932, pp. 136-138.

¹² The merits of self-liquidating assets for commercial banks will be discussed later in Chapter XV.

smaller business houses. The banker, therefore, has sought new outlets for his loanable funds. This condition in part explains the vast expansion of security holdings of banks which has occurred since 1929. At the same time, it has encouraged the banker to experiment with loans of a type previously considered outside the province of the commercial banker.

The term loan. In general, bankers have attempted to steer clear of loans to business for continuous working-capital purposes. Unlike loans to provide short-term seasonal capital, such loans cannot be repaid out of the proceeds of immediate sales but must be extended over a period of time sufficiently long, perhaps several years, to permit repayment out of earnings. Bankers found several objections to making "capital loans." First, such loans were not readily liquidated by sale, but had to be held to maturity. Until the amendments to the Federal Reserve Act in 1935, such paper could not be used as a basis for loans at the Federal reserve banks. Further, remote maturities made such loans somewhat more hazardous than the three-months loan, the repayment of which might be quickly required if the borrower's credit took a turn for the worse. Finally, capital loans were heavily criticized by bank examiners and were frequently classed as "slow."

The need for intermediate credit for small businessmen has led to proposals that government credit agencies be set up to provide such service. To forestall government expansion in this field of credit, bankers have proposed that banks be permitted to set up, co-operatively, intermediate credit agencies which would specialize in making intermediate or capital loans. The reservoir of bank credit would be tapped by the issue of debentures by the intermediate credit banks. No progress has been made in this direction, however. Instead, a growing tendency has appeared among the banks directly to enter the field of capital or term loans.

In Table 13 we may see something of the magnitude and nature of the term-lending practices of the commercial banks. Of the total outstanding commercial, industrial, and agricultural loans of the 400 reporting banks, amounting to \$3,900,000,000, \$1,100,000,000 had original maturities of over one year. In spite of the magnitude of their total volume, the making of term loans is concentrated heavily in the hands of a few banks. Of the 400 reporting banks, 66 reported that they made no term loans, while 77 reported that they had five or less. \$1,000,000,000 in

TABLE 13

BUSINESS LOANS MADE WITH MATURITIES OF OVER ONE YEAR BY
400 REPORTING BANKS AS OF APRIL 19, 1939 *

<i>Location of Reporting Banks:</i>	<i>Number of Loans</i>	<i>Original Amount of Outstanding Loans</i>	<i>Unpaid Balance</i>
400 banks	24,900	\$1,420,000,000	1,160,000,000
New York City banks	1,100	710,000,000	590,000,000
Other city banks	23,800	710,000,000	570,000,000
<i>Size of Loans:</i>			
Less than \$100,000	22,900	170,000,000	
\$100,000 to \$999,000	1,700	460,000,000	
\$1,000,000 and over	300	790,000,000	
<i>Method of Repayment:</i>			
Installment loans	22,100	960,000,000	760,000,000
Non-installment loans	2,800	460,000,000	400,000,000
<i>Original Maturity:</i>			
1 to 3 years	18,200	430,000,000	
3 years or more	6,700	990,000,000	

* "Term Loans," *Federal Reserve Bulletin*, July, 1939.

term loans, or about two-thirds of the total, were made by 16 banks, 10 of which were located in New York City.¹³

In 1938 the Secretary of the Treasury initiated conferences between the representatives of the FDIC, the Comptroller of the Currency, and the Board of Governors of the Federal Reserve System to review, improve, and co-ordinate the supervisory activities of these agencies in the interest of broadening the bank credit opportunities of the small and middle-sized business firms. As a result, new uniform practices were agreed upon in respect to the classification of bank loans.¹⁴ The old classification contained three groups of loans which were subject to varying degrees of criticism: slow, doubtful, and loss. The classification "slow" was especially unsatisfactory, for no general agreement existed as to its real meaning in spite of its connotation of sub-standard assets. Examiners tended to include under this classification both loans on which the borrower had been forced to ask for renewals and sound loans made with original maturities of more than the conventional 90 days.¹⁵ This old classification of loans was therefore replaced by a new one. Class I includes all loans the repayment of which appears assured regardless of maturity. Class II consists of loans which appear to involve a sub-

¹³ Cf. "Term Loans," *Federal Reserve Bulletin*, July, 1939.

¹⁴ *Federal Reserve Bulletin*, July, 1938, p. 563.

¹⁵ Cf. *Annual Report of the Federal Deposit Insurance Corporation*, 1938, p. 72.

stantial and unreasonable degree of risk. Because of the possibility of future loss, such loans require careful attention. Class III consists of loans the ultimate collection of which is doubtful and on which a substantial loss is probable but not yet definitely ascertainable in amount. In computing the net sound capital of the bank, 50 per cent of Class III loans must be deducted from the bank's assets. Class IV consists of loans regarded by the examiner as uncollectible and which must promptly be charged off.

It should be recognized that the making of capital or term loans by commercial banks involves risks which are somewhat greater than those on loans made for shorter periods. To facilitate repayment out of earnings, it is well for such loans to mature serially. Further, special protection is needed for the lender. This may take the form of warehouse receipts issued against the inventory of the borrower, mortgages on plant and equipment, and special agreements by the borrower not to mortgage or pledge any assets during the life of the loan and to maintain a minimum current ratio. The borrower should have a depression record of earnings sufficient to pay the interest and serial maturities.¹⁶

Consumer Financing by Commercial Banks

In their search for safe and profitable outlets for loan funds, commercial banks have begun to establish Personal Loan Departments, and have entered the field of consumer financing. Two types of consumer financing present themselves: retail installment paper and personal loans of cash. In the past, the bulk of the retail installment paper has generally been handled by the finance companies. These companies, operating on funds borrowed from the commercial banks, have had unusual success in financing on an installment basis the purchase of automobiles, trucks, tractors, household appliances, furniture, clothing, and so forth. The banker, looking at such profitable business financed with bank funds, has gradually been reaching out into this field on his own account. His ventures into this field take the form both of purchasing installment paper from retailers and finance companies and of making direct installment loans to the consumer. Under the supervision of the Personal Loan Department also are administered the cash loans to consumers and the modernization loans made under Title I of the FHA. Out of a total

¹⁶ Cf. Brown, Edward E., "How to Make Capital Loans," *Banking*, July, 1938.

of 13,419 insured banks on December 31, 1940, 11,551 reported some personal and retail installment paper. The magnitude of the several classes of consumer loans made by commercial banks may be seen in Table 14. At the end of 1939, retail installment paper held by commercial banks was 40 per cent of that held by the finance companies.

On the whole, bankers report a very favorable experience on their personal loans. Losses have proved to be almost negligible and *net* returns on such loans, after allowance for departmental expenses, have averaged better than 4 per cent. For the country as a whole, average rates of interest charged appear to vary between 5 and 6 per cent.¹⁷ The ratio of personal and retail installment paper to total loans of insured *commercial* banks was approximately 8 per cent.

TABLE 14.

PERSONAL AND RETAIL INSTALLMENT PAPER HELD BY INSURED COMMERCIAL BANKS, DECEMBER 31, 1940 *
(In Thousands of Dollars)

	Total	Retail Installment Paper		FHA Title I Loans	Personal Installment Loans
		Purchased	Direct Loans		
All insured banks	1,468,602	519,460	256,888	275,284	417,970
National banks	818,808	312,020	142,013	161,002	203,773
State member banks	291,093	101,688	42,742	66,686	79,977
Nonmember banks	358,862	105,820	72,133	47,602	133,307

* *Assets and Liabilities of Operating Insured Banks*, December 31, 1940, Federal Deposit Insurance Corporation.

Real Estate Loans

The place of real estate loans in bank portfolios. The much-maligned real estate loans rank high among the secured loans of the banking system. Since 1928 they have made up approximately 9 per cent of the total loans and investments of all member banks. Among the banks other than national in 1939, loans on real estate security were 24 per cent of total loans and investments.¹⁸ Even the national banks at this time reported such loans to the amount of 9 per cent of their loans and investments.¹⁹

¹⁷ Cf. *Survey of Personal Loan Department Experience and Practice*, 1938, Bulletin 74, Research Council of the American Bankers Association.

¹⁸ Computed from reports of the condition of banks, given in the *Annual Report of the Comptroller of the Currency*, 1940, p. 267.

¹⁹ *Ibid.* The importance of real estate loans developed rapidly after amendments to the law in 1927 enlarged the powers of national banks to allow them to make loans on city real estate for five years instead of one year, as from 1914 to 1927. In 1926 the real estate loans of national banks were only 3.7 per cent of loans and investments.

The bulk of bank loans on real estate has been made on urban rather than on farm property. Only 6 per cent of the reported real estate loans of all banks in the United States was on farms, and in only four states are the loans of banks on farms in excess of those on city property.²⁰

The popularity of city real estate as a basis for loans can be explained in no small measure by the concentration of a large volume of savings deposits in the larger towns and cities. The boom in city construction following the First World War gave the city banks with substantial savings deposits an attractive outlet for their funds. The attractiveness of real estate loans was due not only to the favorable rates which such loans tend to yield, but also to certain collateral advantages which exist. More specifically, a bank in a position to make loans on city real estate has been able not only to invest its funds at profitable rates, but also to earn a substantial amount in the way of fees for investigating the security and making the loan. Moreover, these fees may be earned many times on the basis of a given investment through the expedient of reselling the real estate mortgage to depositor-customers who wish to invest accumulated savings after interest-paying dates. This process of resale is facilitated, in the case of larger loans, by putting the mortgage held as security in trust and issuing real estate bonds against the mortgage in convenient denominations. The arrangement is of advantage in that it makes resale easier by furnishing bonds in sizes attractive to investors and enables the bank to resell without assuming any liability through indorsement. If the bank is able to develop a vigorous sales department, it can "turn" the real estate loan (or bond) inventory several times during the year, collecting fees for making each new loan, in addition to interest.²¹ One of the obvious difficulties arising from this practice from the standpoint of sound banking was the fact that such profits tended to make the banker careless in the making of the loan, since competition was often keen, and the ready turnover of loans gave him a feeling of false security because of an apparent liquidity dependent upon the ability to resell the real estate bonds. Such liquidity was extremely uncertain, as many city banks discovered to their sorrow. The seductive profits of the stock market boom and later the fall in real estate values and defaults on real estate bonds during the depression reduced this

²⁰ *Ibid.* Those states were Iowa, Kansas, Mississippi, and Nebraska.

²¹ Some banks in Chicago in 1926 reported to the writer that such loans were turned as high as six times in the course of a year.

liquidity to zero. At such a time the poorly secured real estate loans in the portfolio of many banks contributed to their undoing.

Mortgage trust certificates. Another development in the making of real estate loans has been the use of mortgage trust certificates. These consist of obligations of the bank specially secured by selected mortgages, which are placed in the hands of a trustee. The purchaser of the certificate receives a rate of interest above that paid by the bank on time deposits, which makes the investment attractive. The security is: (1) the obligation of the bank; and (2) the mortgages pledged with the trustee. If the bank fails, the holder of the certificate is still protected by the mortgages.²² The bank, although still liable for ultimate payment, is able in this way to free its funds for the purpose of making new loans. The mortgages held in this case continue to be listed among the bank's assets, while the mortgage certificates appear as liabilities.

Should banks make real estate loans? Loans on real estate are often condemned as investments for banks. Such condemnation arises partially from the fact that traditional banking theory, if not practice, holds that commercial banks with demand liabilities should make only short-time self-liquidating loans for commercial purposes. More vital than this theory to practical bankers, however, is the unfortunate experience of bankers with such loans. During the years preceding the banking holiday of 1933, the collapse of many city banks disclosed the fact that they were heavily loaded down with loans on real estate which were not only unliquid but to a considerable degree without value. Added to this is the fact that in rural districts the banks' holdings of farm mortgages frequently have gone bad. It is small wonder that the real estate loan has been so roundly criticized.

What are the characteristics of such loans? Are they undesirable and unsafe for a bank to make? First, it must be recognized that real estate loans are essentially unliquid. This is not always true in view of the provisions for emergency sale of mortgages to the Federal land banks and to the Home Owner's Loan Corporation, yet the loan itself is unliquid, and the possibility of disposing of the mortgages is so uncertain that a banker must consider such loans as a fixed part of his portfolio. He must seek for liquidity elsewhere.

²² It is entirely possible that dishonest management may substitute worthless for good mortgages held by the trustee unless proper safeguards are provided in the arrangement.

Second, real estate loans frequently have no provision for regular amortization of the principal within the life of the loan. In consequence, the principal of a five-year loan, the maximum legal length for a national bank real estate loan before 1935, is very likely to be largely unpaid at maturity, and the borrower must look to a renewal. This may be easy to arrange in times of confidence, but if the sentiment among bankers is bad, renewals may prove difficult. The borrower is thus given inadequate protection. The best protection that can be afforded both the borrower and the banker is a loan policy on the part of the bank which provides for real estate loans arranged as to length and amortization of principal so that they are extinguished when due. This should be coupled with a policy of making such loans in the light of the basic inactive part of the bank's deposit liabilities. A properly operating amortization plan, in addition to being of great benefit to the borrower, introduces a small but certain element of liquidity to the real estate loan portfolio sufficient to enable the alert banker to alter the position of his real estate loans from time to time without embarrassment to anyone.

Third, because loans on real estate are normally used to finance the purchase of land and the building of improvements, they are necessarily of remote maturity. This inevitably accentuates the problem of the basic security. Obviously, more changes can take place to affect the marketability of goods and services in five or ten years than can occur in six months. The demand for a certain commodity may disappear; a city, town, or a given subdivision may decline because of broad economic changes or purely local developments; or a sharp increase in local property taxes may reduce income. Here is the real problem of real estate loans. To avoid loss, enough care and foresight must be exercised when the loan is made to offset the possible effects of time. The real estate loan, if carefully and intelligently made with an ample margin of security, can be a valuable part of the bank's portfolio. But to be successful, the lender must measure long-time trends of industries and localities to a greater degree than must the short-time lender. It is insufficient to lay down a rule of 50 per cent of the appraised value of the property unless the appraisal goes beyond the temporary conditions existing at the moment when the loan is made and accurately takes account of the trend. It is little wonder that real estate loans have come to grief so frequently when made during times of real estate boom, with an eye only to the immediate fees and profits available. That real estate loans can be both safe and profitable is

shown by the experience of the mutual savings banks. In 1932, 65 per cent of the loans and investments of the mutual savings banks of the state of New York were loans on real estate²⁸; yet no savings banks failed in that state between 1911 and 1933.

Legal Regulation Affecting Bank Loans

Because competition among banks and the self-interest among bankers cannot be relied on to insure safe lending policies among banks, the legislatures of the various states, as well as Congress, have provided regulations governing bank loans. There are several reasons for this. First, excessive competition has caused the banker to pay high rates of interest on deposits, which in turn stimulate the making of dangerous but high-interest-bearing loans and investments. Second, our unit banking system has brought more personal contact between customer and banker than is likely to exist in the larger and more impersonally managed branch banks of other countries. Hence there is greater danger of granting personal favors to friends, whether warranted or not. Third, our American banking traditions and methods have developed along the lines of American business. The banker is a businessman, and as such normally sees no reason why the funds of the bank should not be at his disposal. In other words, no well-defined professional attitude exists among American bankers.

For various reasons, then, it has seemed necessary to attempt control from the outside. The effort is frequently of little effect because of evasion, and because to some extent control has been misguided. It is next to impossible to supervise the banks in such a manner as to prevent violations of the law, as is evidenced by the not infrequent discovery of violations which have been going on for years before bank failures. Moreover, when violations are discovered, the examiners and supervisory authorities sometimes fail to take adequate and prompt measures to terminate them. Yet, it must be said that the great majority of bankers attempt to obey the law and that the legal regulations seriously influence the make-up of bank portfolios.

Limits on loans to one borrower. Perhaps the most common form of regulation of bank loans deals with the size of loans which a bank is permitted to make to any one borrower. The purpose of such regulation is in part, at least, to insure some degree of

²⁸ *Annual Report of Comptroller of the Currency*, 1932, pp. 534-536. In December, 1939, real estate loans of all mutual savings banks in the United States were 46 per cent of their total loans and investments. *Ibid.*

diversification among the bank's loans. When enforced, it tends to give diversification as to individual borrowers, although it quite obviously fails to insure diversification among industries or territories, which is of almost equal importance. Further, it is sometimes said that the rules limiting the size of individual loans are designed to insure that the lending capacity of banks is not monopolized by a few borrowers but is made available for the community at large. Whatever the purpose behind such regulations, they are universally found in American banking laws.

The limitations placed upon the loans of banks to one individual or firm may best be illustrated by the National Banking Act.²⁴ A national bank may lend to any one borrower (including, in the case of partnerships, the obligations of any partner, and in the case of corporations, all subsidiaries in which the corporation has a controlling interest) not more than 10 per cent of its capital and surplus. To this limitation there have been grafted exceptions which ease the burden of the 10 per cent rule. Excepted altogether from its operation are: (1) obligations in the form of drafts and bills of exchange drawn against actually existing values; (2) acceptances of member banks; (3) obligations arising from indorsement and discount of commercial paper owned by the person concerned; and (4) obligations representing loans to banks or receivers or conservators of banks when approved by the comptroller. Partial exceptions are made in the case of: (1) obligations arising from the indorsement and negotiation of noncommercial paper owned by the person negotiating it, for which the limitation is 15 per cent of the bank's capital and surplus, in addition to the 10 per cent; (2) obligations secured by United States obligations or those guaranteed by the United States, for which the limitation is 15 per cent in addition to the 10 per cent; (3) obligations secured by livestock worth 115 per cent of the loan, on which the limit is 15 per cent, in addition to the 10 per cent; and (4) obligations secured by documents of title to readily marketable, nonperishable staples, for which the limit is an additional 15 per cent above the 10 per cent, provided the market value of the staples is not less than 115 per cent of the loan. However, the limit is expanded by 5 per cent of the bank's capital and surplus for each 5 per cent additional margin of collateral, up to a maximum of loans amounting to 50 per cent of the bank's capital and surplus if the collateral is worth 140 per cent of the face of the loan.

²⁴ *Revised Statutes*, Section 5200.

The exceptions which have been grafted on to the original rule in large measure constitute concessions to the national banks in order that they might more easily meet the competition of state banks, for which the rules are generally more lenient. The whole rule has been criticized as cumbersome and unsatisfactory. It reduces the ability of the smaller banks to attract and keep the loan accounts of the commercial and industrial concerns which are unable to obtain adequate credit accommodation under the 10 per cent rule applying to all straight single-name commercial paper loans. These better borrowers in many smaller cities are compelled to resort to the open market for commercial paper or to the larger banks in the financial centers. Thus many banks are deprived of their best possible borrowers by the rule. To offset this, they must either buy commercial paper at low rates in the open market, if available, or lend to less desirable borrowers of the community. It seems certain that diversification and safety of loans might be insured more successfully by modification of the rule, particularly as it applies to unsecured paper.²⁵ Not only has this rule tended to deprive smaller bankers of some of their best borrowers, but also it has had some influence in the promotion of mergers of banks in order to facilitate the accommodation of the large borrowers.

Loans on a bank's own stock. National banks, like state banks, are prohibited from making loans on the security of their own shares of stock.²⁶

Real estate loans. Another type of regulation applying to bank loans is that dealing with loans on real estate. The national banks originally were not permitted to make any such loans. They might, however, come into possession of liens on real estate indirectly. Should a loan show signs of weakness, the bank might exact additional protection in the form of a real estate mortgage. It not infrequently happened that such mortgages were acquired through subterfuge, since many national banks have always been desirous of making real estate loans. However, the freedom of most state banks from any prohibition on such loans gave them the upper hand until the National Banking Act was amended (1913) to enable national banks outside of central reserve cities to make loans on real estate. At first

²⁵ For a good discussion of this problem, see Bradford, Frederick A., *Banking*, New York, Longmans, Green & Co., 1932, first edition, pp. 437-441. He suggests that the limit on unsecured single-name paper might well be raised to 20 or 25 per cent of the lending bank's capital and surplus.

²⁶ *Revised Statutes*, Section 5201.

they were limited to lending for five years on improved farm land. In 1916, authority was extended to permit the making of one-year loans on improved city property. In 1927, the powers of national banks to make real estate loans were considerably expanded for the purpose of enabling them to compete more successfully with state banks.

Under the Banking Act of 1935, national banks may make first mortgage loans on improved real estate, provided the bank takes the whole loan, without restriction as to location of the mortgaged property. Mortgages may be on farm, business, or residential property. Unamortized loans may be made for periods not to exceed five years, to an amount of not over 50 per cent of the appraised value of the real estate. Loans up to 60 per cent of the appraised value may be made for periods of not over ten years if provision is made for the amortization of at least 40 per cent of the principal within ten years. These limitations do not apply to mortgages insured under the National Housing Act. The total amount of real estate loans may not exceed 100 per cent of the bank's capital and surplus, or 60 per cent of its time and savings deposits, whichever is greater.

Loans to executive officers and affiliate and security loans. New regulations on the loans of member banks were incorporated into the Federal Reserve Act by the amendments of 1933, 1935, and 1939.

These are:

(1) No executive officer of any member bank shall borrow from any member bank of which he is an executive officer more than \$2,500 and then only upon the approval of a majority vote of all the directors. However, loans by member banks to executive officers in force June 16, 1933, may be renewed where necessary until 1944. Lending to a partnership in which one or more executive officers of a bank hold a controlling interest is under this limitation. Moreover, if an executive officer of a member bank borrows from any other bank, he is required to make a written report of such borrowings to the chairman of the board of directors of his own bank stating the date, the amount, the security for and the purposes of the loan.²⁷

(2) Member banks are forbidden to advance funds to any one affiliated company, either by making loans, purchasing stocks or bonds, or lending on collateral security of the stocks or bonds of such affiliate, to an amount greater than 10 per cent of the bank's capital and surplus. Total advances to all affiliates is limited to 20 per cent of its capital and surplus.²⁸ Further, loans to affiliates not secured (a) by obligations of the United States Government, the Federal intermediate credit banks, the Federal land banks, the Federal home loan banks, or the Home Owners' Loan Corporation or (b) by paper

²⁷ Federal Reserve Act, Section 22.

²⁸ *Ibid.*, Section 23-A.

eligible for purchase or rediscount by the Federal reserve banks, must be secured by collateral of stocks and bonds having a market value at the time of the making of the loan of at least 20 per cent more than the loan. However, if collateral offered consists of the obligations of any state or political subdivision, only 10 per cent margin of collateral is required. Affiliates to which these provisions apply do not include corporations holding the bank premises June 16, 1934, engaging in safety deposit business, extending agricultural credit, holding obligations listed above in (a) or engaging in foreign banking.

(3) The Board of Governors of the Federal Reserve System, upon affirmative vote of at least six members, may fix for each Federal reserve district the percentage of individual member bank capital and surplus which may be represented by loans secured by stocks and bonds. Such a percentage shall be subject to change from time to time on ten days' notice and shall be established with a "view to preventing the undue use of bank loans for the speculative carrying of securities." The Board of Governors has an enforcement weapon in the power to suspend all rediscount privileges at the Federal reserve banks for offending member banks which violate its orders.²⁹

Finally, the Securities Exchange Act of 1934, Section 7, provides that the Board of Governors shall prescribe regulations as to the amount of credit that may be extended on any nonexempted security registered on a national securities exchange. This puts into the hands of the Board the control of margin requirements on the bulk of the collateral loans made by banks.³⁰

The foregoing new regulations on the loans of member banks resulted from the disastrous banking developments revealed by the events of the period 1929 to 1933. The restrictions on loans by member banks to their own executive officers is a decidedly healthy one and should materially aid in preventing the too common occurrence of excessive loans to executive officers of banks dominated by one or two men. The limitations on loans to affiliates are designed to prevent a repetition of some of the unfortunate incidents which occurred during the heyday of speculation in 1928 and 1929.

²⁹ *Ibid.*, Section 11 (m).

³⁰ The new regulations of the Board of Governors were amended on October 27, 1937. Under these regulations, loans by both banks and brokers for the purpose of purchasing and carrying registered securities are limited to 60 per cent of the market value at the time the loan is made. Banks may lend to brokers up to 75 per cent of the market value. The regulations do not apply to loans for purposes other than for the purchase and carrying of securities.

CHAPTER XIV

BANK INVESTMENTS

Volume of investments. Purchased securities, mainly bonds, play an important part in the portfolio of banks. They have been considered desirable bank assets in the past because, first, if readily salable, they are valuable additions to the bank's secondary reserves. Second, they may be purchased at times when the local demand for loans is inadequate to absorb the bank's idle reserves. The immense volume of excess reserves which appeared after 1929, with the great decline in commercial loans, has led to a tremendous increase in the investments of banks. The relative volume of securities held by member banks more than doubled between 1929 and 1936, when they increased from 28 per cent to 61 per cent of total earning assets. This growth was accompanied by a similar increase in the dependence of member banks upon income derived from investments, as may be seen clearly in Chart 6. From about 20 per cent of member banks' total earnings in 1929, interest and dividends on investments had almost doubled in relative importance by 1935. In the meantime, income from loans declined in importance from 65 per cent of total earnings to about 40 per cent.

Tables 15 and 16, showing the investments of the national banks at intervals since 1914, and the relative importance of the investments of all member banks since 1928, indicate something of the nature of commercial bank bondholdings.

Beginning with 1914, the investments of national banks were 22.9 per cent of the total loans and investments. They rose to a high of 61.6 per cent in 1936. The investments of all member banks likewise reached a peak of 61 per cent of total loans and investments the same year. The expansion in loans since 1936 has slightly diminished the relative importance of investments.

The most important single type of investment consisted of United States Government obligations. These became popular partially because of their increased availability during and after

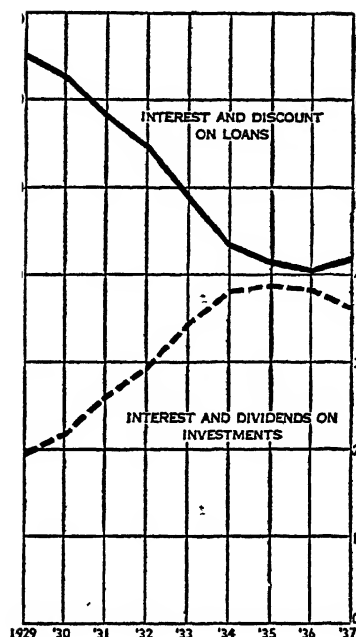


CHART 6. COMPARATIVE RETURNS ON LOANS AND INVESTMENTS OF ALL FEDERAL RESERVE MEMBER BANKS, 1929-1937 (EXPRESSED AS PERCENTAGES OF TOTAL CURRENT EARNINGS). Source: *The Earning Power of Banks*, 1939, Research Council, American Bankers Association, p. 49.

the First World War and partially because of their usefulness as secondary reserve. Banks are permitted to borrow from the Federal reserve banks on their 15-day notes by using United States bonds as collateral. Furthermore, these securities always have a ready market. In April, 1941, the holdings by member banks of United States obligations made up 43.5 per cent of total loans and investments.

Banks as bond buyers. It is frequently said that banks are poor bond buyers, implying that they tend to buy at high prices and sell at low prices, thus taking capital losses which offset the earnings. This is explained in two ways: (1) Banks normally attempt to accommodate their own customers first, since the banker feels a special obligation in this regard. If business is brisk and times are good, the number of sound local borrowers is likely to increase. A shortage of loanable funds tends to force up short-time money rates, which in turn reduces the attraction of fixed interest-bearing bonds to all lenders and investors. Bond prices tend to fall, therefore, just at the time when bankers are

TABLE 15

CLASSIFICATION OF NATIONAL BANK INVESTMENTS*

(In Millions of Dollars)

Date	Total	U. S. Obligations (including securities guaranteed as to principal and interest)		Ratio of U. S. Obligations Not Pledged to Secure Circulation to Total Investments	State, County, Municipal	Railway Bonds	Public Service Corporation	Claims and Warrants	Foreign	All Other
		Total	To Secure Circulation							
June 1914.....	1,914	799	740	3.0%	176	341	218	35	15	328
June 1918.....	3,957	2,116	691	36.0	320	406	267	290	283	271
June 1920.....	4,186	2,269	706	37.3	338	416	283	328	240	309
June 1922.....	4,565	2,285	733	34.0	414	486	318	385	249	423
June 1926.....	5,842	2,469	750	29.0	647	631	545	403	372	772
June 1929.....	6,656	2,803	666	32.0	767	592	694	120	494	1,100
June 1930.....	6,888	31.6	667	33.0	791	660	783	143	527	1,124
June 1931.....	7,196	32.6	667	33.0	997	719	828	147	476	1,150
June 1932.....	7,196	3,352	669	37.0	1,031	652	684	120	344	918
June 1933.....	7,371	4.0	730	44.7	1,162	530	533	...	266	849
June 1934.....	9,348	6,003	724	56.4	1,212	529	519	...	197	888
June 1935.....	10,716	69.2	725	64.8	1,386	593	536	...	155	873
June 1936.....	12,482	61.6	...	67.6	1,537	665	653	...	173	1,004
June 1937.....	12,122	67.8	...	67.8	1,464	673	638	...	163	961
June 1938.....	11,644	58.2	...	68.6	1,425	595	555	...	119	969
June 1939.....	12,550	67.2	...	69.7	1,693	535	478	...	125	950
June 1940.....	12,903	58.4	...	70.6	1,928	484	346	...	118	916

* Annual Reports of the Comptroller of the Currency.

likely to be selling securities to obtain funds needed for the accommodation of local borrowers. This sale of securities helps to depress the bond market still more. On the other hand, when business is dull and local demands for funds are few, the banks seek opportunities to invest idle reserves. The prices of bonds at such times are increased, because they provide a more attractive investment for all money lenders, including the banks. Therefore, the banks are always on the wrong side of the market. (2) A second explanation for the inaptitude of banks as bond buyers is that the motivating factor in the increase or decrease of bond investments is to be found in the changes in the relation of interest on high-grade commercial paper to the yield on bonds.¹

TABLE 16

INVESTMENTS OF ALL MEMBER BANKS *
RATIO IN PERCENTAGE TO TOTAL LOANS AND INVESTMENTS OF:

Date	U. S. Obligations (direct and fully guaranteed)	Other Securities	All Securities
Oct. 3, 1928	12.5	17.7	30.2
June 29, 1929	11.6	16.5	28.1
June 30, 1930	11.3	17.8	29.1
June 30, 1931	15.7	19.9	35.6
June 30, 1932	20.1	20.6	40.7
June 30, 1933	27.7	20.3	48.0
June 30, 1934	34.6	19.2	53.8
June 30, 1935	39.7	18.8	58.5
June 30, 1936	42.3	18.7	61.0
June 30, 1937	38.7	17.6	56.3
June 30, 1938	40.1	17.7	57.8
June 30, 1939	42.2	17.4	59.6
June 30, 1940	42.7	16.7	59.4
April 1, 1941	43.5	15.7	59.2

* Computed from reports in *Federal Reserve Bulletin*.

The losses of national banks from such sources during the greater part of their life must have been infinitesimal. From 1880 to 1902, the total bonds not tied up as security for notes or government deposits amounted to less than 8 per cent of the total resources. In addition, these bonds showed no large variation from one season or year to the next. In later years, particularly after the First World War, the very substantial bond-holdings of the national banks made losses of this kind more probable. But during the period from 1891 to 1934, there are

¹ For a discussion of this point, see Steiner, W. H., *Money and Banking*, New York, Henry Holt & Co., 1933, pp. 245-246.

only three years in which the security holdings of national banks actually showed any decline from June 30 of one year to June 30 of the next. The years showing some decline (1920, 1921, and 1929) were years of extraordinary pressure upon the short-time loan market, and the decline in security holdings is thus to be expected. The total decrease in the two years 1920 and 1921 was about 18 per cent of the bondholdings of 1919. The decline of 1929 over 1928 was about 7 per cent. Granted that the yearly figures conceal variations from season to season and that data for all national banks do not disclose what happens to individual banks, the fact still remains that losses realized by banks through the sale of investments during times of increased customer-loan demand are, on the whole, slight. The three years since 1891 when investments were reduced were years characterized by abnormally high short-time money rates, which compensated for losses sustained through the sale of bonds.

This does not mean, however, that bond investments of banks cannot become an important source of loss. On the contrary, losses on security investments may be serious. These losses are caused not so much by the fact that banks are on the wrong side of the market as that they have absorbed quantities of securities of mediocre grade which present attractive rates of earnings but inadequate security. Such bonds have proved to be a serious source of embarrassment to banks, owing both to their weakness under fire of heavy liquidation in times of panic and to their default in times of stress. At such times the banker is in a difficult position in evaluating his securities for the purpose of making up his statement of condition. Furthermore, if it happens that he is compelled to liquidate such bonds to strengthen his reserve position, he makes a heavy sacrifice. Moreover, the pressure on the bond market after 1928 caused the banks heavy inventory losses on bonds of the best grades. Between January, 1929, and April, 1933, the *New York Times* index of average market prices of forty high-grade bonds declined one third. The seriousness of such a depreciation can be visualized by applying it to the investments of the national banks. A decline of $33\frac{1}{3}$ per cent in the market value of national bank investments in 1929 would have wiped out 63 per cent of the stockholders' equity.

Evaluating the bond account. The extreme decline in bond values during the years 1931 and 1932 placed the problem of determining the proper method of evaluating the bond inventory of banks squarely before those who were in charge of bank examination and reports. Several different methods are normally

followed by banks in evaluating bonds for purposes of published statements. They are: ²

1. Original cost.
2. Original cost with amortization of premium and accumulation of discounts to maturity.
3. Original cost with reserves against depreciation.
4. Market value, permitting appreciation of some securities to offset the depreciation of others.
5. Cost or market, whichever is lower.

In following any practice other than the evaluation of securities at cost, there arises the problem of determining: (1) what is the proper value of issues having no ready market; and (2) whether or not banks should be compelled to write down the value of securities to the market value so long as they are not in default. If it may be assumed that securities, when acquired, will be held to maturity, a disregard of the market value would seem to be justified. If, however, the bank is forced to rely upon liquidation of securities in times of stress, the market value can hardly be disregarded. The examiners for the Comptroller of the Currency, generally speaking, have based their valuations on present market value. The sharp decline in security prices during 1931 made some modification of such a rule imperative if good banks were not to be made to appear insolvent. In September of that year the Comptroller issued instructions to his examiners to classify all the securities of the banks examined into 13 grades, the classification to be based upon the lowest rating given the bonds by four statistical agencies. Bonds falling into the four highest of the 13 grades were exempt from a charge-off for depreciation in market value so long as they were not in default. Bonds in the remaining nine grades were to be marked down to their market values by a semiannual charging off of 25 per cent of the depreciation until the full amount had been written off, unless the bond was in actual default, in which case it was to be marked down to its market value at once.³

In 1938, at the same time that a new classification of bank loans was agreed upon by the Comptroller of the Currency, the FDIC, and the Board of Governors of the Federal Reserve System, a revision was also made in the prescribed method for

² "Operation of the National and Federal Reserve Systems," *Hearings, Subcommittee of Committee on Banking and Currency, United States Senate, 71st Cong., 3rd sess., S. Res. 71, Appendix, Part vii, p. 1040.*

³ *Ibid.*, p. 1077.

evaluating the bond inventories of banks. The new rules are:

1. Securities owned by banks are classified by the examiners into four basic groups:

Group I consists of securities in which "the investment characteristics are not distinctly or predominantly speculative." This group includes rated securities falling into the four highest rating grades (for example, Aaa, Aa, A, Baa, according to one method) ⁴ and unrated securities of equivalent value.

Group II consists of securities in which the "investment characteristics are distinctly or predominantly speculative." This class includes securities, not in default, rated below the four highest grades or their equivalent in unrated securities.

Group III consists of securities (bonds) in default.

Group IV consists of corporate stocks.

2. Securities in Group I are to be evaluated at cost, with neither appreciation nor depreciation shown on the examiner's reports. Moreover, appreciation and depreciation of such securities will be disregarded in computing a bank's net sound capital. Thus, so long as a bank's securities remain within the classification of investment securities, no question of inventory losses need arise unless an actual loss is realized through sale.

3. Securities in Group II are valued at their average market price for the 18 months preceding examination. Fifty per cent of any net depreciation so calculated must be deducted in computing the bank's net sound capital. This provision, like that governing the valuation of securities in Group I, is properly designed to relieve the bank from the danger of serious embarrassment from inventory losses in time of acute depression and crisis.

4. Net depreciation in securities classified in Groups III and IV must promptly be written off as losses. Such securities must be carried at market value.

5. Premiums paid when securities are purchased must be amortized so as to be written off at maturity.

6. Until losses have been written off and adequate reserves established, profits from the sale of securities may not be used for any other purpose.

⁴The dependence of examining and supervisory officials upon the ratings of bond-rating companies in determining what are to be classed as "investment securities" has been severely criticized. Cf. Palyi, Melchior, "Bank Portfolios and the Control of the Capital Market." *Journal of Business*, 1933, pp. 70-114.

Liquidity of bond investments. Marketability of a substantial part of a bank's bondholdings is necessary if they are to be a source of liquidity. Among 18 New York City banks, the percentage of bonds not listed on any security exchange varied from as high as 89, 81, and 74 per cent to as low as 4 and 6 per cent. Only 8 of the 18 held unlisted bonds to an amount of one-third or more of the total. Among 20 banks outside of New York City, located in 12 different states, the proportions of unlisted securities varied from as high as 70, 65, and 54 per cent down to 12, 13, 15, and 16 per cent. These banks on the whole carried a larger proportion of listed bonds than did the New York City banks.⁵

As we have already seen, losses on the bond inventory of banks may result from two sources. The first is the purchase of speculative securities. The second is the changes in capital values of high-grade bonds resulting from changes in interest rates. That such a loss is entirely possible may be seen in the spread in prices of high-grade bonds. For example:

United States Treasury 4 $\frac{1}{4}$'s, sold at par in 1918, were selling at 78 in 1920.

United States Treasury 3 $\frac{1}{4}$'s (callable in 10 years) sold at 99 in September, 1934, and at 110.15 in December, 1936.

United States Treasury 4's, 1954, sold at 94 in January, 1932, and at 116 in December, 1936.

Santa Fe General 4's of 1995, sold at 104 $\frac{1}{2}$ in 1906, at 69 in 1920, and at 111 in 1934.

The latest regulations governing the evaluation of securities relieves the banks of the danger of loss due to a fall in capital value of high-grade bonds so long as they are not actually liquidated in the market. To the extent that the long-term investments are protected by an adequate margin of short-maturing securities not subject to capital loss with changes in interest rates, the banks are now in no danger of suffering any serious loss from the purchase of long-term securities. This point is especially important now when securities (largely governments) comprise such a large fraction of bank earning assets. The distribution of maturities of securities held by the banks, therefore, takes on considerable significance.

The liquidity of member bank investments is well illustrated by the following percentage distribution of maturities as of December 31, 1939.

⁵ *Hearings, op. cit.*, p. 1039.

	<i>All Member Banks</i>	<i>New York City</i>	<i>Other Reserve Cities</i>	<i>Country Banks</i>
Securities maturing in 5 years or less	41%	53%	38%	32%
Securities maturing after 5 years	58	46	61	66
Other securities (in default or without specific maturity)	1	1	1	2
	<hr/> 100%	<hr/> 100%	<hr/> 100%	<hr/> 100%

Among the New York City banks, short maturities comprise over one-half of all security investments, while in other reserve cities and country banks approximately one-third are of short maturity. It would seem, therefore, that a sufficient margin of securities not subject to serious capital loss is being maintained to safeguard the banks adequately. The investments of the insured commercial banks are shown in Table 17.

Repurchase agreements. Not all bonds reported by banks as a part of their portfolios actually represent investments in the ordinary sense of the term. Some are bought under a repurchase agreement by the seller, who contracts to buy the bonds back at a stated price and at a stated time.⁶ The bond thus closely resembles a security loan to the seller. The use of the repurchase agreement, most common in New York City, is explained partially by the fact that it enables banks virtually to lend to one borrower an amount in excess of the statutory limit. Further, the bank's customer obtains the full market value, since no margin requirement applies. The bank obtains the coupon rate of interest; and where the bonds are tax exempt (government and municipal bonds being most commonly used), it obtains a tax-exempt income. The bank may be able to reduce the volume of its security loans if it wishes, while the borrower may be able to conceal in its statement of condition what are essentially "bills payable."⁷

Legal regulation of bank investments. Quite naturally, security investments of banks have been influenced by legislation and the rules laid down by examining authorities. Generally speaking, the regulations governing the investments of banks

⁶ Under the regulations of the Comptroller of the Currency, banks may buy with an option to resell, but the seller cannot have an absolute right or option to repurchase. Likewise, banks may sell with an option to repurchase if the buyer does not have an option to resell. Since these regulations apply to all member banks, such banks are precluded from making such agreements with each other. *Federal Reserve Bulletin*, March, 1936, p. 195.

⁷ *Hearings, op. cit.*, pp. 1047-1049.

TABLE 17

BONDS, NOTES, AND DEBENTURES HELD BY OPERATING INSURED COMMERCIAL BANKS, DECEMBER 31, 1940 *
By Class of Bank and by Date of Maturity
(Amounts in Thousands of Dollars)

	<i>All Banks</i>	<i>Members F. R. System National</i>	<i>State</i>	<i>Not Mem- bers F. R. System</i>
Number of banks	13,438	5,144	1,342	6,952
Direct obligations of the United States Government—total	13,344,441	7,642,011	4,695,397	1,007,033
Treasury bills	662,274	445,062	206,924	10,288
Treasury notes	2,755,793	1,720,130	874,139	161,524
Bonds maturing in 5 years or less	1,458,211	727,530	639,958	90,723
Bonds maturing in 5 to 10 years	3,152,675	1,524,940	1,360,754	266,981
Bonds maturing in 10 to 20 years	4,751,726	2,908,212	1,436,743	406,771
Bonds maturing after 20 years	563,762	316,137	176,879	70,746
Obligations guaranteed by the United States Government—total ..	3,719,465	2,093,305	1,392,333	233,827
Maturing in 5 years or less	2,444,654	1,324,833	1,014,916	104,905
Maturing after 5 years	1,274,811	768,472	377,417	128,922
Obligations of Government corporations and agencies, not guar- anteed by the United States Government—total	528,474	322,085	177,270	29,119
Maturing in 5 years or less	388,515	239,142	138,648	10,725
Maturing after 5 years	139,959	82,943	38,622	18,394
Obligations of States and political subdivisions—total	3,608,290	2,004,686	1,008,007	595,597
In default	8,624	6,032	703	1,889
Without specific maturity	249,833	187,625	32,807	29,401
Maturing in 5 years or less	2,056,866	1,067,938	720,710	267,218
Maturing after 5 years	1,293,967	743,091	253,787	207,089
Other bonds, notes, and debentures—total	2,481,995	1,368,600	685,242	428,153
In default	70,328	32,454	23,236	14,638
Maturing in 5 years or less	639,807	318,597	261,310	59,900
Maturing after 5 years	1,771,860	1,017,549	400,696	353,615

* *Assets and Liabilities of Operating Insured Banks*, December, 1940.

operating under state charter (except savings banks) have been more lenient than those applying to national banks. Although the national banking law made no mention of the right of national banks to invest in other than government bonds, such banks have for many years carried bond investments. Specific legislation regulating the investments of the national banks was provided in amendments passed in 1927, 1933, and 1935. As the law now stands, national banks may:⁸

1. Purchase and sell investment securities for customers without recourse against the bank.

2. Purchase investment securities for their own account, provided that the obligations of any one maker shall not exceed 10 per cent of the bank's capital and surplus. No restrictions apply to bonds of the United States or any political subdivisions thereof, or to obligations arising under the Federal Farm Loan Act or issued by the Federal Home Loan Banks, the Home Owners' Loan Corporation, or the Federal Housing Administrator when guaranteed by the United States. The Comptroller of the Currency may define "investment securities."⁹

3. Invest in corporate stocks only as follows:

- (a) They may invest not more than 15 per cent of their

⁸ *Revised Statutes*, Section 5136. See also the Federal Reserve Act and Agricultural Credits Act of 1923. State member bank investments are, by the act of 1933, subject to the same regulations as those of national banks.

⁹ The regulations by the Comptroller on this point include the following requirements:

1. They must be salable under ordinary circumstances with reasonable promptness at a fair value.

2. Such public distribution must exist as to insure the marketability of the issue; or,

3. Other existing securities of the obligor must have such a public distribution as to protect or insure the marketability of the issue; or,

4. In case such public distribution is impossible for sound issues of established commercial or industrial firms, it is sufficient that (1) they demonstrate ability to service the issue, (2) the maturity of such securities be not later than ten years after the date of issue, and (3) at least 75 per cent of the debt will be amortized at maturity.

5. Where the security is issued under a trust agreement, the trustee must be a bank or trust company independent of the obligor.

6. They must not be distinctly or predominantly speculative, nor may they be in default as to either principal or interest.

7. The bank must provide regular amortization of any premiums paid above par. In no event shall the security be carried at a value above the price at which the obligor may redeem it.

8. Securities convertible into stock at the option of the issuer may not be purchased. Where such conversion is at the option of the holder, securities may be purchased only at prices representing their true investment value.

9. These restrictions do not apply to real estate securities acquired under Section 24 of the Federal Reserve Act. *Federal Reserve Bulletin*, July, 1938.

capital and surplus in any corporation organized to conduct a safe-deposit business.

- (b) Without special permission of the Comptroller of the Currency, they may invest in bank premises or in stocks and bonds of a corporation holding the premises of the bank not more than the amount of their capital stock.
- (c) They may buy the necessary stock in the Federal reserve banks.
- (d) They may buy stock in banks to engage in foreign banking (limited to 10 per cent of the bank's capital and surplus).
- (e) They may buy stock in National Agricultural Credit Corporations (limited to 10 per cent of the bank's capital and surplus).

In view of the unfortunate experiences of banks with their bond accounts during depressions, it seems desirable that some standard of quality of bond investment similar to that required of well-regulated mutual savings banks be set by law for all banks.

Administration of the bond account. The importance of bonds among the assets of banks introduces the vital problem of intelligent purchase. This involves: (1) the question of the general quality of appropriate bonds; (2) the investigation of the proper rating of individual issues the purchase of which is contemplated; and (3) the administration of the bond account once it is set up. It is evident that the bond account involves problems similar in general outline to but different in specific details from those of commercial loans. It requires careful and constant analysis of the bond market, which in itself demands a high degree of specialized skill.

In order to avoid the losses which arise from buying bonds when they are expensive and selling when they are cheap, the bond account, except bonds carried for secondary reserve, might be made a permanent part of the bank's portfolio regardless of the ebb and flow of the customer demand for loans. This account should consist mainly of "money bonds" or bonds of the highest grade. The temptation to buy low-grade bonds to increase earnings should be resisted, even in the face of high competitive interest payments on deposits, if losses through default are to be avoided in times of stress.

The problem of choosing high-grade bonds which are of maximum benefit to the bank is a difficult one. Country banks must to a large extent rely upon their city correspondent for advice. The city bank itself must be adequately provided with expert

investment officers who can utilize the numerous agencies and services which collect data on companies with bond issues as well as conduct independent investigation of the quality of bonds appearing in the market. Naturally, purchases of bonds must not be made upon the sole recommendation of the underwriters or bond salesmen.

Once the bonds have been purchased, their standing should be scrutinized at frequent intervals if losses are to be avoided. Moreover, the bond account will show more profit if a sufficient part is in issues which are sufficiently close to maturity to insure an opportunity for disposing of them without loss. This periodical examination enables the bank to take advantage of changes in the market for bonds. At times, when long-term, high-grade bonds decline in price, the banker in such a position can purchase them on favorable terms. Further, when long-term bonds appear to have reached their peak, the watchful investment officer will dispose of his holdings and acquire shorter maturities less subject to the decline which will accompany higher money rates. In this manner the "cost" of the bonds making up the security account may be kept at a minimum, thus improving the yield.¹⁰

Losses on bonds and loans. The increase in the importance of bonds as compared with loans among bank assets brings to the fore the question of whether or not it is desirable for banks to advance more funds designed to furnish business enterprises with fixed capital. Some condemn this tendency as contrary to sound commercial banking principles. Others hold that the practice is permissible if the assets representing advances of a fixed nature are shiftable. This point will be discussed in a later chapter. However, realized losses, after recoveries, on bond investments have been somewhat lower than on loans, while the net rate of earnings has been smaller.

It is possible partially to evaluate the effects of the trend of banks toward increased security holdings by examining the experience of member banks since 1927. In Table 18 are shown the annual rate of (1) gross earnings, (2) net losses after recoveries, and (3) net returns on loans and investments of member banks for the years 1927-1940. Also, the average figures for the 14 years are given. Throughout the period, gross earnings

¹⁰ For a good discussion of the problem of bond investments for banks, see an article in the *American Bankers Association Journal*, October, 1932, entitled "Investments," by Arthur B. Taylor, Chairman of the Bank Management Commission, American Bankers Association. This article is based upon the results of a survey of bank investments by the commission and has been heavily relied upon in the foregoing discussion.

TABLE 18

PERCENTAGE GROSS EARNINGS, NET LOSSES AFTER RECOVERIES, AND NET RETURNS ON LOANS AND INVESTMENTS OF MEMBER BANKS,
1927-1940 *

Year	Interest on Loans	Interest and Dividends on Investments	Losses on Loans Minus Recoveries	Losses on Investments Minus Recoveries ¹	Net Returns on Loans	Net Returns on Invest- ments
1927	5.4%	4.7%	4%	- .8% ^a	5.0%	5.5%
1928	5.6	4.8	.3	- .5 ^a	5.3	5.3
1929	6.1	4.6	.4	.0	5.7	4.6
1930	5.3	4.5	.6	.2	4.7	4.3
1931	4.9	4.1	1.2	1.5	3.7	2.6
1932	5.0	3.8	2.2	2.0	2.8	1.8
1933	4.6	3.5	3.0	2.1	1.6	1.4
1934	4.3	3.2	3.2	.9	1.1	2.3
1935	4.1	2.7	1.4	-.4 ^a	2.7	3.1
1936	4.0	2.6	.8	-1.3 ^a	3.2	3.9
1937	4.0	2.6	.3	.0	3.7	2.6
1938	4.1	2.5	.6	-.1 ^a	3.5	2.6
1939	4.2	2.3	.4	-.4 ^a	3.8	2.7
1940	4.2	2.1	.2	-.3 ^a	4.0	2.4
Annual 14-year average	4.7%	3.4%	1.0%	2%	3.7%	3.2%

* Computed from data appearing in the *Federal Reserve Bulletin*. Figures for total loans and total investments used for percentage calculations are averages of the amounts on the call dates of each year.

¹ Included in "recoveries" are profits derived from the sale of securities.

^a Excess recoveries and profits on sale of securities over losses.

on loans exceeded by a very considerable margin the gross earnings on investments: for the 14 years, interest on loans averaged 4.7 per cent while interest and dividends on investments averaged but 3.4 per cent. Net losses on loans (losses minus recoveries) averaged 1 per cent for the period, while net losses on investments (losses minus recoveries and profits realized on bond sales) averaged but 0.2 per cent. Although losses on bonds during the earlier stage in the depression exceeded losses on loans, the recoveries on bonds were more favorable. As a result, the experience of member banks for the 14-year period shows an annual average rate of return of 3.7 per cent on loans and of 3.2 per cent on investments. To the extent that the experience of this period is a fair test of banking operations, it appears that, on the average, net returns on investments were not very much worse than net returns on loans. If expenses per unit of handling the investment operations of the banks should prove to be anything less than the unit cost of making loans, the disadvantage of investments would appear even smaller. It is possible, however, that the net returns on investments will not continue in the future to bear so favorable a relation to the net returns on loans. Referring again to Table 18, one can see that since 1937 the net

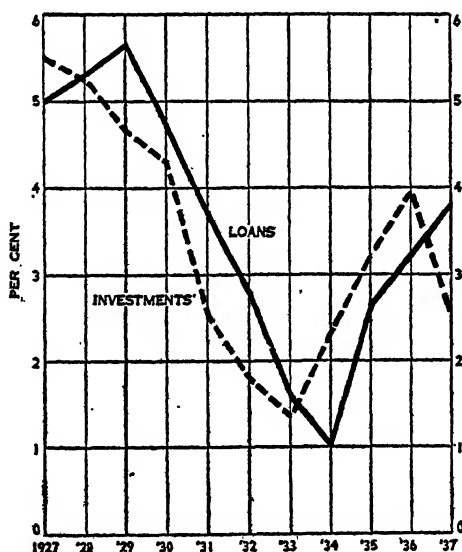


CHART 7. LOAN AND INVESTMENT PERCENTAGE YIELDS OF ALL FEDERAL RESERVE MEMBER BANKS, 1927-1937 (AFTER RECOVERIES AND LOSSES BUT BEFORE EXPENSES, TAXES, ETC.). Source: *The Earning Power of Banks*, 1939, Research Council, American Bankers Association, p. 56.

returns on loans have been over 1 per cent above the net returns on investments. The growing importance of government securities and the disappearance of recoveries in bond values seem responsible. So long as government securities continue to play such an important part in bank investment portfolios, the advantage will be likely to rest with loans. It should be pointed out that the data appearing in Table 18 do not include the experience of banks which failed during any given year.

The continued importance of bank investments requires that care be taken to avoid losses. In order to fortify itself against undue losses, the individual bank must: (1) look to the ultimate security of any bonds purchased; (2) be certain of their marketability in order to be able to dispose of holdings that threaten to become undesirable; and (3) hold long-term bonds in such amounts as will not exceed, with other unliquid assets, the volume of deposits that are, by a wide margin, certain of stability. The growth in relative importance of government securities and the present leniency in the valuation of high-grade securities lessen very considerably the danger of losses due to the great expansion in banks' bond portfolios.

CHAPTER XV

THE BANK'S PORTFOLIO

Requirements of a bank's portfolio. We have considered the various forms which a bank's earning assets may take. These earning assets, as they actually exist in any given bank, make up its portfolio. The portfolio must be arranged with three distinct considerations in mind: (1) liquidity, (2) solvency, and (3) earnings. Without liquidity, the bank cannot operate and meet depositors' demands. Without solvency, it must ultimately fail, with subsequent losses realized by the stockholders and probably by the depositors. Finally, without earnings, the banking operations cannot be carried on by private enterprise.

It is apparent that these three essential requirements placed upon the bank portfolio are not altogether in harmony. True, liquidity implies short-run solvency, to say the least, but it varies inversely with the earning power of assets. Likewise, it is possible to achieve ultimate solvency without liquidity, as is illustrated by the well-secured real estate loan. Finally, earnings are often sought at the expense of both liquidity and solvency. It is evident that, essential as they are, earnings must at all times be made secondary to the requisite liquidity and the solvency of the bank. This must not be construed, however, to mean that bankers should never make a loan or an investment that is less sound than the maximum humanly possible. Such an attitude would be too rigorous for business, which cannot well provide absolute security for its borrowing. But any margin of speculation in the portfolio should be amply covered by the stockholders' equity.

Obviously, liquidity is the first consideration in organizing the portfolio. Without adequate provision for this, the bank faces certain extinction when the pressure of deposit withdrawals is met. To maintain excessive liquidity is to sacrifice earnings. It is clear that a bank should carry liquid assets in amount sufficient to meet: (1) the seasonal demands of depositors, which can

be forecast in the light of experience;¹ and (2) the cyclical variations in deposits, taking measures to increase the liquidity of the portfolio during times of boom or excessive prosperity. Such action would have the double advantage of protecting the bank and acting as a brake upon speculative excesses which characterize such times. It is probably too much to expect the average banker to anticipate and guard against such cataclysmic disturbances as took place in the banking field from 1930 to 1933, when the loss of confidence in banks by the public caused the complete breakdown of banking functions. The secondary reserve, which has already been studied, is relied upon to provide this liquidity.

After the necessary liquidity has been provided, the remainder of the bank's portfolio may be arranged with an eye to solvency and earnings only. Naturally, the particular kind of assets used will depend to a large extent upon the type available. The obligations of industrial firms which are customers of a bank will find their way into the less liquid part of the portfolio. Real estate mortgages will appear in banks which find an insufficient outlet elsewhere. Diversification to some extent may be achieved through investments in bonds.

Self-liquidating loans. The requirements of liquidity and solvency raise the fundamental problem of the appropriate form which bank assets should take. In particular, it raises the question of the importance of self-liquidating paper as compared with paper that is not self-liquidating. The position of many writers on banking theory is that commercial banks should confine themselves to making loans to finance the short-time current working capital needs of commerce and industry.² These loans have the advantage of being self-liquidating in character and therefore more appropriate for banks with demand liabilities, because of both liquidity and security. This theory holds that commercial banks should avoid making advances to industry to provide fixed capital, but should leave such loans to other financial agencies without demand obligations (such as savings banks, investment trusts, and the bond market in general).

In spite of this theory, American banks generally have in practice departed from the exclusive holding of self-liquidating com-

¹ These, of course, vary with the nature of the depositors' requirements and the nature of the deposits, whether thrift or current accounts.

² For example, see Willis, H. Parker, Chapman, John M., and Robey, Ralph W., *Contemporary Banking*, New York, Harper & Bros., 1933, p. 437. See also Waldo F. Mitchell, who quotes numerous writers to a similar effect in an article on "The Liquidity of Bank Earning Assets," *Journal of Political Economy*, 1923, p. 245.

mercial paper. One need but examine the growing importance of securities among bank earning assets to discover this fact. Loans on real estate and loans to security dealers, investors, and speculators are for the most part used for fixed capital rather than for temporary working capital purposes. Since this is the trend, it is of little use to bewail the departure from the standards of classical bank theory. We are confronted with an actual situation which appears, with some notable exceptions, to work fairly well in practice.

Let us examine self-liquidating commercial paper and observe its similarities to and differences from other forms of bank loans. Self-liquidating commercial paper arises in connection with a loan to a borrower who uses the proceeds to increase his working capital. This new working capital, in the normal course of events, will be transformed into salable goods or services which will return to the borrower the funds with which to pay the loan. If the period of the loan is long enough to enable the borrowed capital to make the cycle—from money, to working capital, to salable goods, and back to money again—the loan may properly be called self-liquidating. If the period of the loan is too short, it is not self-liquidating. It follows from the above definition that a loan whose proceeds are to be used by the borrower to acquire fixed capital goods might be self-liquidating if the loan were to run for a period of time sufficient for the capital goods to earn back the interest and principal of the loan. A loan on city real estate for one year (as was permitted to most national banks from 1914 to 1927) is obviously not self-liquidating, yet such a loan of sufficient length, with principal properly amortized, might be self-liquidating.

The continuous borrower's paper. Some question may arise concerning the self-liquidating character of short-time loans which are made to firms engaging in continuous operations with very little seasonal variation. If they borrow at banks, they tend to borrow constantly. Should their paper be considered self-liquidating in the face of the fact that their borrowing tends to be continuous? From a strictly logical viewpoint, such paper can hardly be considered self-liquidating for the reason that the borrowing firm is not automatically able to retire the loan at its maturity. To require that the borrower pay the loan at maturity would involve either a reduction in the volume of working capital (obviously not normally desired) or a recourse to borrowing at other banks. Strictly speaking, it is possible for such a borrower to repay the loan if he has an adequate excess of current assets

over current liabilities and is willing to reduce to some extent the scale of his operations. One might, therefore, say that this loan is self-liquidating. However, it differs from loans made to supply working funds needed to carry the borrower over a seasonal peak, since such loans can be repaid at maturity without embarrassment to the borrower.

Fixed capital loans. The self-liquidating loan, according to the traditional theory, provides the bank with the liquidity so necessary to meet the varying demands of depositors. On the other hand, advances of a fixed capital nature have no direct inherent liquidity. In making such loans, the bank must depend upon its ability to shift the burden to other banks. This involves: (1) the calling of loans on securities or the reduction of time loans on securities as they mature; or (2) the sale of securities owned outright by the bank.³ To what extent can the banker rely upon the "shiftability" of his security loans and investments to provide him with liquid funds? Is such a reliance safe? These are important questions which are raised by current banking practice. Another question which must be faced is the equally vital one of whether or not, disregarding the matter of liquidity, loans which are not self-liquidating give adequate protection against loss of principal and interest.

Shiftable versus self-liquidating loans. A self-liquidating loan, as we have said, is one which will normally be repaid out of the income resulting from the use to which the funds are put. A loan which is not self-liquidating, on the other hand, gives rise to no chain of events which will naturally and normally return funds to the borrower within the life of the loan. This can best be illustrated by two examples. Suppose, first, that a person borrows a sum from a bank for thirty days to finance a transaction which cannot be completed within six months. The ability of the borrower to repay his loan in thirty days rests solely upon his ability to increase his income by some method unrelated to this transaction or to borrow elsewhere to replace the first loan. Let us take a second case. Suppose a person obtains a thirty-day loan at a bank for the purpose of buying securities. At the end of thirty days, the borrower's ability to repay rests upon: (1) his ability to borrow elsewhere; or (2) his ability to sell his securities to some other party who perhaps borrows elsewhere. Thus it is clear that the liquidity of loans which are not self-

³ It should be remembered that real estate mortgages and direct advances to business for continuous working or fixed capital needs (when no annual cleanup is required) have practically no "shiftability" and are not self-liquidating.

liquidating depends entirely upon the success with which the loan can be shifted to some other bank. The same reasoning naturally applies to the outright security holdings of banks. Those with a ready market can be easily sold to other banks or to borrowers at other banks.

To what extent are self-liquidating commercial loans similar to loans which acquire liquidity only through shiftability? In practice, some of the best forms of so-called self-liquidating paper acquire their liquidity through shiftability. This is true of that part of the commercial loans of the country which represents continuous working capital of the borrowers. Liquidity of open-market paper is often achieved (1) by the flotation of new issues and (2) by the utilization of bank credit lines; and the annual "cleanup" demanded of commercial borrowers frequently involves a mere shifting of loans to other banks. To the extent that this is true, what seems to be self-liquidating paper turns out to be merely shiftable. The continuous operation of the borrower under the circumstances does not permit the liquidation of a sufficient amount of the firm's working capital actually to pay off the bank loans. It is estimated that bankers in large cities expect to be called upon to renew between 40 and 50 per cent of their unsecured loans and are in fact willing to do so provided the condition of the borrower's business continues to be satisfactory. The "annual liquidation" requirement often made by banks to "line of credit" borrowers is frequently cared for by borrowing elsewhere, either directly from another bank or indirectly through the commercial paper market.⁴

What of the short-time loans to businessmen which are actually self-liquidating? What is the source of their liquidity? Simply this: The borrower will have something to sell before the loan matures. In the ordinary course of business events, the goods can be sold and the loan repaid out of the proceeds. But what determines whether or not the goods can actually be sold? Assuming that they are staple goods, readily marketable, they can be sold at a reasonable price provided the normal buyers are able to obtain funds, loans let us say, in the ordinary manner to which they are accustomed. Stating it in another way, the self-liquidating character of a good commercial loan depends upon the continuation of the willingness of other banks to extend loans to the buyers of the goods produced by the original bor-

⁴ Moulton, H. G., "Commercial Banking and Capital Formation," *Journal of Political Economy*, 1918, p. 658.

rower. All of this is, of course, a matter of shiftability again. Are we to conclude, therefore, that there is no essential difference in the liquidity of a self-liquidating loan and of one which is not? It is true that fundamentally both types of loans depend for their liquidity upon the continuation of the willingness of the banking system as a whole to maintain a given general level of loans. The essential difference between the two types of loans rests in the fact that the individuals on the buying end of transactions arising out of the two types of loans behave differently. The borrower in the case of a self-liquidating loan depends upon selling his goods in the market. Insofar as the goods are in steady demand, they can either be sold to middlemen who directly or indirectly utilize funds resulting from other bank loans, or be sold to consumers, who give up a portion of their income. The buyers may normally be depended upon to buy so long as the banking system operates in a normal fashion and the demand for the particular thing to be sold does not falter.

On the other hand, the borrower who uses his funds for the purchase of securities is able to repay his loan if the banking system continues to function normally in furnishing loanable funds and if the buyers of the securities care to buy at that particular moment.⁵ The appearance of buyers who are willing to buy at prices high enough to enable the borrower to repay his loan is much less certain than the appearance of buyers for the goods of the merchant or manufacturer. This seems to be the core of the difference between the two types of loans. The thing bought by the borrower of funds for working capital purposes is much more certain of finding an ultimate market than the thing bought by a person who makes a non-self-liquidating loan. The latter person is compelled to rely on the sale of long-term capital goods, themselves, or their paper representatives instead of goods more nearly in consumable form. The remoteness of the return on long-term capital, together with the hazards which attend its ownership, results in highly speculative and fluctuating market values. This, then, is the real reason why it is less desirable for a bank with fixed obligations in the form of deposits to acquire assets of the type which are not self-liquidating in character.

On the other hand, a loan which on its face appears to be self-liquidating may in fact turn out not to be so. This would be true, for instance, of a commercial loan used to finance the pro-

⁵ This is true even if he does not intend to sell but wishes to borrow elsewhere on the same security. The fall in the market value reduces by that amount his ability to borrow elsewhere.

duction of some article which had suddenly fallen into disfavor and had become unmarketable. It would also be true of commercial loans to producers of either luxuries or capital equipment at a time when a depression appears in business.

One thing should be clearly evident from the above discussion. Regardless of the nature of credit extended by commercial banks, it is entirely impossible to expect the whole banking system to possess any large degree of liquidity. Whether loans are self-liquidating or merely shiftable, in the final analysis the liquidity of any particular bank's assets depends basically upon the continued willingness of the other parts of the banking system to lend or invest freely. To some extent, of course, commercial banks may shift the burden of providing liquidity upon the central bank. But any wholesale attempt on the part of the banking system to liquidate its loans and investments must necessarily fail.

Objection to fixed capital loans. If our analysis is correct, the real reason why commercial banks must watch carefully capital loans which are not self-liquidating in character is that such loans are based upon long-time capital goods, including real estate, whose present and future value is highly problematical. If a bank wishes to make such loans, it must be certain of obtaining a margin of security sufficiently large to guarantee the liquidity of the loan through shiftability. For example, a loan secured by stocks and bonds must necessarily have enough margin or excess of collateral to insure the bank that changing market values due to the ebb and flow of speculative fever will not endanger the ability of the bank to realize enough on the sale of collateral to cancel the loan. It is unnecessary that the bank be more concerned about the "freezing" effect of a general tie-up of banking operations on collateral loans than on self-liquidating commercial loans. Both types become highly unliquid in case of a general collapse of normal banking functions. Likewise, the outright security holdings of banks are generally shiftable if they consist of high-grade, readily marketable bonds. There is, of course, this important distinction between properly margined collateral loans and outright ownership of securities. The collateral loan should protect the bank against losses in market value, whereas there is no possibility of preventing such losses on outright holdings of long-term bonds if it becomes necessary to liquidate them. Even the best of bonds show considerable variation in market value with changes in the market rates of interest.

We are forced to the conclusion that capital loans in the form

of loans on stock and bond collateral with adequate margin may be fundamentally just as liquid as the average self-liquidating loan. The same cannot be said for the outright investments of banks unless they combine the characteristics of soundness and nearness to maturity. It should be apparent, however, that the shift in the nature of American bank loans in the direction of more capital loans and investments raises serious questions regarding the methods for managing banks under the somewhat changed conditions.^a To achieve liquidity as well as underlying security for portfolios containing capital loans, great care must be taken with regard to both the amount and the marketability of collateral. As long as the collateral is readily marketable and adequate margins are preserved, such loans provide liquidity of a high order. On the other hand, the outright investments in securities other than high-grade short-term bonds do not provide liquidity without danger of serious losses due to changing market values. Hence, they should be included among banks' earning assets only to the extent to which liquidity is not essential. Another form of fixed capital advances—real estate loans—belongs in the same category, although they possess less marketability than listed bonds.

Effects of the relative growth of fixed capital loans. The increase in the relative importance of fixed capital advances among the loans of American banks gives rise to several questions:

1. How does it affect the essential liquidity of the banks? In answer, we can say that properly margined loans on stocks and bonds provide just as much liquidity as does the self-liquidating loan. This is not true of most bond investments and real estate loans, a fact which must be borne in mind.

2. How does it affect the ultimate soundness of the bank assets? Again, the answer in the case of loans on stocks and bonds depends upon the adequacy of the margin of security. In the case of real estate loans and bond investments, the answer is simply this: such advances may be sound and desirable if ample precaution is taken in investigating and watching the underlying security and the obligors' ability to pay. That this is so is indicated by the very favorable experience of the mutual savings banks, whose assets are largely of this character.

3. How does it affect the nature of bank management? It requires the banker to become a skillful analyst of the security market in order that the adequacy of margins on loans can be

^aThis point is emphasized by Willis, H. Parker, and Chapman, John M., in *The Banking Situation*, New York, Columbia University Press, 1934, pp. 527-528.

properly determined. Further, it requires skillful analysis of investment values and care in the administration of the investment accounts, as well as expertness in measuring trends in the field of real estate values.

4. How is the relation of the banker to industry affected? The banker as a middleman exercises a directive function through his ability to grant and withhold loans to particular individuals and industries. Insofar as the banker's function becomes one of a mere analyst of the stock and bond markets, his control over the distribution of capital in industrial uses becomes more remote. His judgment is warped and influenced not only by the prospects of the underlying basic industries behind the securities, but also by the speculative temper of the market. Thus, if adequate margin is offered, he will hardly refuse to lend on securities of corporations to which he might be unwilling to make any direct loans. This in particular seems to be one of the serious evils of the growth of security loans at the expense of short-time credit. By lending on securities in a rising market, the banks have enabled industry to finance itself without direct contact with the bank. Further, by making easy the increase of long-time capital funds through the stock-market, the banks contribute heavily to the maladjustments which characterize periods of boom.

One can hardly avoid the conclusion that the excessive increase in security loans and bond investments presents a serious problem in modern banking. The dangers of losses on securities due to inexperience in purchasing and the sacrifices caused by forced liquidation have been sharply brought to our attention by occurrences since 1929. Is the trend likely to continue or may a reversal be expected in the near future? First, one must realize that the individual bank is more or less helpless and must float with the tide. The expansion of stock market financing, based originally and ultimately upon bank security loans in 1928-1929, left the individual banker with no choice but to follow along. He was compelled to do so partially because of the attraction of high rates of earnings on stock exchange loans and partially because of the drying up of demand for short-term commercial loans when the marketing of securities became easy. Later, deficit financing by the Treasury, coupled with high excess reserves, led to an unprecedented trend toward security investments by banks. It seems probable that the short-term commercial loans will never regain anything like their old importance in bank portfolios.

CHAPTER XVI

BANKERS' ACCEPTANCES

AMONG the liabilities of banks there sometimes appear the items "letters of credit" and "acceptances." The first is evidence of a promise to extend credit, while the second indicates the actual extension of credit by the bank in whose statement it appears. Bankers' acceptances, as we have already seen, are negotiable drafts drawn against a bank, payable at some future date and "accepted" by the drawee bank on presentment. This acceptance has the effect of binding the acceptor to pay the draft when due. When the accepting bank is well known and of good credit standing in the community, its acceptance is considered prime paper and is much sought after by banks for use as secondary reserve and by other institutions desiring a highly liquid and sound investment.

Borrowing with the use of bankers' acceptances. Firms desiring credit accommodation have the opportunity, under suitable conditions, to draw such drafts on accepting banks and then to sell them in the money market. The borrower must, of course, give the accepting bank adequate assurance that it will be put in possession of funds with which to pay the acceptance when due. Further, the accepting bank charges a commission for the use of its credit. The banker's acceptance, then, appears as a device for enabling a would-be borrower to borrow on the credit of the accepting bank. This is of advantage to him in that he may obtain his money at rates slightly more favorable than if he were to borrow directly. The banker's acceptance in his possession can be discounted in the central money market at the lowest available rates. The bank is the gainer in that it receives a commission for the acceptance but does not part with any funds or create any deposit liabilities requiring reserves.

This roundabout extension of credit by the accepting bank creates on the liability side of the statement the item "acceptances outstanding." Since the offsetting protection for the lia-

bility consists solely of "customers' liability," it follows that the extension of acceptance credit involves just as careful scrutiny of the ability of the borrower to repay as does a straight loan. To prevent the abuse of such credits by American banks, the Federal Reserve Act carefully limits and regulates the acceptance powers of member banks.¹

Regulations governing acceptances. The regulations governing the acceptance of drafts by member banks fall under four main heads.²

1. *Maturity.* The length of time for which such drafts may run is limited to six months' sight exclusive of days of grace.

2. *Volume.* Member banks (including state members authorized by law or charter)³ may accept drafts to an amount aggregating not over 50 per cent of their capital and surplus.

The Board of Governors will entertain applications from banks having a surplus account of at least 20 per cent of their capital for power to accept drafts to an aggregate amount of not over 100 per cent of their capital and surplus. The application will be approved if the Board is satisfied with the standing of the bank and is convinced that banking and business conditions warrant it. However, the aggregate amount of acceptances growing out of domestic transactions cannot exceed 50 per cent of the bank's capital and surplus.

Also, on approval of the Board, member banks may accept drafts drawn by banks in foreign countries for the purpose of furnishing dollar exchange. Such drafts may have not more than three months' sight to run, exclusive of days of grace. The aggregate amount of such drafts shall not exceed 50 per cent of the bank's capital and surplus. This limit is separate and distinct from the limits placed upon other types of acceptances.

3. *Purposes.* Bankers' acceptances may be created by member banks in order to finance the import and export of goods; to finance the domestic storage and shipment of goods; to finance the storage of goods in and the shipment of goods between foreign countries; and to create dollar exchange.⁴

¹ Before the passage of the Federal Reserve Act in 1913, national banks were not permitted to accept drafts. State and private banks exercised the function to a limited extent, however, before this time.

² Federal Reserve Board, *Regulation C*.

³ For a digest of state laws on the acceptance powers of state banks, see *Hearings, Subcommittee of Committee on Banking and Currency, United States Senate, 71st Cong., 3rd sess., S. Res. 71, Appendix, Part 6*.

⁴ The original provisions of the Federal Reserve Act limited the use of acceptance powers of member banks to the financing of imports and exports. Later

4. *Security.*⁵ Acceptances arising out of financing the shipment of goods in foreign commerce need have no specific collateral unless the amount of acceptances made for any one firm or person is over 10 per cent of the accepting bank's capital and surplus. Any excess, however, must be secured during the life of the acceptances by attached documents or some other actual security growing out of the same transaction. A trust receipt⁶ is not considered actual security, but a draft drawn on a buyer of goods accompanied by the bill of lading is classed as "actual security" even after the documents of title have been surrendered to the drawee upon his acceptance of the draft.

Acceptances arising from domestic shipment of goods must be accompanied by shipping documents of title at the time of acceptance. This requirement arises from the desire to insure that the transaction financed is a self-liquidating one. After acceptance, the documents may be released unless the acceptances for any one person or firm exceed 10 per cent of the accepting bank's capital and surplus. In this case, the excess requires collateral security.

In order to indicate their self-liquidating character, acceptances arising from the storage of goods either at home or abroad require security at the time of acceptance in the form of warehouse receipts or other documents of title covering readily marketable staples which await reasonably prompt sale or consumption in the orderly process of trade or manufacture. Again the law does not require that the accepting bank retain the collateral security except against the excess above 10 per cent of its capital and surplus. But if the acceptance is to be eligible for rediscount or purchase by the Federal reserve banks, it must remain secured throughout its life.

Acceptances giving rise to dollar exchange in excess of 10 per cent of the accepting bank's capital and surplus must be protected at the time of acceptance by documents of title or other adequate security.

Accepting banks. At the beginning of their experience with acceptance credits, many banks without adequate knowledge or equipment for acceptance credit work undertook to accept drafts.

it was amended to include the power to accept drafts growing out of domestic shipment of goods or based upon documents of title covering readily marketable staples. By rulings of the Federal Reserve Board, this power has been construed to apply to goods in storage in foreign countries and the shipment of goods between foreign countries.

⁵ Federal Reserve Board, *Regulation C*.

⁶ For a brief description of the trust receipt, see page 163.

Such banks were not in close touch with the principal discount markets, with the result that their accepted bills did not command the best rate. This fact in turn reduced the advantage of using their facilities, so that the number of accepting banks gradually declined from about 500 in 1918-1921 to about 164 in 1930. These banks were made up of 87 national, 48 state, 10 private, 6 foreign, and 13 American agencies of foreign banks.⁷

Acceptances for financing imports. Acceptances arising from imports originate in the request of an importer to his bank for a letter of credit. This letter, sent to the exporter in the foreign country, authorizes him to draw a draft on the bank, payable at such future time as is called for by the terms of sale. Under such an acceptance, the issuing bank agrees to accept and pay the draft if properly drawn and accompanied by the bill of lading and other shipping documents showing that the goods have been shipped. When the exporter draws a draft under the letter of credit, he either discounts it at his bank or delivers it to his bank for collection. In either event, the draft is forwarded to an American correspondent of the foreign bank for presentment and acceptance. The draft may then be discounted in the American money market or held until maturity for the benefit of the exporter or his bank. The American accepting bank is thus lending its name to assist the American importer to purchase foreign goods on favorable credit terms. The importer may obtain the documents and possession of the goods either upon his own reputation or upon delivery to the bank of a trust receipt or other satisfactory security.

Acceptances for financing exports. Acceptances arising from exports resemble those arising from imports except that the request for the letter of credit arises from the foreign buyer through his bank. The American exporter is thus permitted to draw a draft on the American bank issuing the letter of credit, to have the draft accepted, and to discount it in the money market. In this way the accepting bank is assisting the foreign buyer to purchase goods on favorable credit terms.

Other uses for acceptances. Acceptances for financing domestic shipment and storage of goods directly assist the drawer of the accepted draft to obtain funds economically. Acceptances for financing the storage of goods in or the shipment of goods between foreign countries have the result of giving foreign

⁷ American Acceptance Council, *Facts and Figures Relating to the American Money Market*, 1931, pp. 7-8.

businessmen access to the favorable rates of the American money market. Thus, for example, an Englishman wishing to sell goods on credit to a South American buyer might request that the South American arrange, through his bank, for the issuance of a letter of credit by a New York bank. If this is done, the English exporter ships the goods, draws a draft on the New York bank under the letter of credit, and discounts it with his bank. The English bank forwards the draft to the drawee bank for acceptance, sells it in New York, and transfers the proceeds back to England through the foreign exchange market. The American accepting bank is thus enabling the South American importer to obtain credit in New York for his purchases.

The use of acceptances for creating dollar exchange involves the drawing of time drafts by foreign banks on their American correspondents, which accept the same and have them discounted in the local money market. The proceeds are then credited to the account of the foreign bank in order to provide it with balances against which to draw dollar drafts for the benefit of customers who find it necessary to remit dollars in payment of debts to Americans.

Importance of bankers' acceptances. Before 1929 the total import and export acceptances of American banks amounted to about 50 per cent of the value of our foreign trade. In 1929 and 1930 the low rates in the American money market were responsible for the fact that American acceptances financed 70 per cent of our foreign trade.⁸ In 1935 acceptances financed only 24 per cent of our exports and 32 per cent of our imports.⁹ The greatest gain in any one class of acceptances was in those arising out of the storage of goods in and shipments between foreign countries, which amounted to only \$8,000,000 in April, 1925, but rose to \$560,000,000 in December, 1930.¹⁰ Since 1930 the volume of bankers' acceptances has gradually declined. In April, 1941, the total outstanding was only \$220,000,000, reflecting both the decline in domestic credit requirements based on goods in storage and the low ebb of foreign trade financed through the conventional channels. Of the limited amount of acceptances available, \$105,000,000 were in the hands of the banks which accepted them, \$66,000,000 were in the hands of other banks engaged in the acceptance business, while \$49,000,000 were in the hands of other banks or investors. These acceptances were mainly drawn

⁸ American Acceptance Council, *op. cit.*, p. 13.

⁹ *New York Times*, March 26, 1936.

¹⁰ American Acceptance Council, *op. cit.*, p. 14.

to finance American imports and exports, with but 27 per cent of the total being drawn for other purposes.

The use of bankers' acceptances as a direct means of handling credit sales in foreign trade is of great assistance to the parties involved. The uncertainty of the credit standing of the importer desiring to purchase on credit makes it necessary in the majority of cases that the credit of a bank be substituted for that of the importer. As a result, not only is the hazard of credit extension reduced for the exporter, but the actual cost is reduced through the activity of the accepting bank, which is in a better position to judge the credit standing of the importer as well as to enforce obligations against him. Therefore, the interposition of the accepting banker decreases the cost of financing foreign trade.

The advantage in the use of bankers' acceptances for financing domestic storage and shipments, and storage and shipments between foreign countries, lies not so much in the economies in the analysis and extension of credit as in the fact that the acceptances give the parties involved an opportunity to obtain credit on more favorable terms by providing access to better money markets than are otherwise available. For example, the domestic acceptance, based upon goods in shipment or storage, enables the drawer to obtain his funds at rates considerably lower than the ordinary customers' rate, although the cost tends to correspond closely with the cost of borrowing in the open market on prime commercial paper. The commission charged by the accepting bank and the dealer's profit must be included in the cost. The banker's commission amounts to about 1 or $1\frac{1}{2}$ per cent per annum on acceptances running for ninety days or longer, while the dealer's profit is about $\frac{1}{8}$ of 1 per cent per annum.¹¹ Table 19 shows the relation of the bankers' acceptance rates to commercial paper rates during a representative period.

In contrast with the average rate of 3.3 per cent, which New York City banks charged customers in June, 1934, the rate on 90-day prime bankers' acceptances was only $\frac{1}{8}$ to $\frac{1}{4}$ of 1 per cent. Thus, the borrower able to find acceptance credit could pay a commission of 1 per cent per annum, give the dealer his profit, and still get his funds at a cost of less than half that of direct borrowing.¹²

¹¹ Federal Reserve Bank of Richmond, December, 1923, "Bankers' Acceptances," *Letter No. 12*, p. 16; "Open Market Operations," *Letter No. 13*, p. 18. See also Steiner, Wm. H., *Money and Banking*, 1933.

¹² *Federal Reserve Bulletin*, July, 1934, p. 457. For a good discussion of the advantages of using bankers' acceptances to finance the domestic storage of goods,

TABLE 19

AVERAGE DAILY RATES FOR 90-DAY BANKERS' ACCEPTANCES AND 90-DAY PRIME
COMMERCIAL PAPER *

<i>Year</i>	<i>Acceptances</i>	<i>Commercial Paper</i>
1919.....	4.33%	5.39%
1920.....	5.98	7.04
1921.....	5.44	6.62
1922.....	3.50	4.42
1923.....	4.09	4.97
1924.....	2.96	3.90
1925.....	3.28	3.92
1926.....	3.61	4.27
1927.....	3.45	4.07
1928.....	4.10	4.86
1929.....	5.03	5.74
1930.....	2.46	3.45

* As quoted by the American Acceptance Council, *op. cit.*, pp. 62-63.

The accepting bank, in times when a brisk demand for loans prevents the accumulation of unused reserves, is willing to accommodate the businessman seeking acceptance credit. Without any tying up of loanable funds, the bank is able to earn a commission through the loan of its name. A bank with \$2,000,000 capital and surplus might maintain acceptance credit of \$2,000,000 outstanding and thus earn from \$20,000 to \$25,000 per year. However, this involves the expense of carrying on the business, including the risk of loss. The very narrow margin of profit, therefore, requires that the risk be kept at a minimum by careful extension of credit on transactions that are actually self-liquidating at maturity.

During times of surplus reserves and slack demand for loans, banks which might adequately provide accommodation to customers through straight loans are compelled by competition to give borrowers in a position to get acceptance credit the advantage of the low rates. Frequently in such times, the bank discounts its own acceptances, which then become loans while held by the accepting bank.

see Burgess, W. Randolph, *The Reserve Banks and the Money Market*, 1936, Chapter X. The advantage in the use of acceptance credit instead of borrowing at customer-loan rates has diminished with the decline in customer's rates.

CHAPTER XVII

THE VOLUME OF BANK CREDIT

THE VOLUME of bank credit may be measured by two separate standards. In actual practice, these two standards are frequently confused and used interchangeably.¹ One measure is the amount of loans and investments of banks. This represents the credit extended by the banks to all borrowers—industrial, governmental, and private—whether for long or for short term. The total loans and investments of the banking system correspond roughly with the total bank deposits. This must be so because the loans of any one bank are limited by the volume of its deposits, while for all banks combined, the deposits are to a large extent limited by and are the result of loans. This paradox will be considered later.

A second standard for measuring the volume of bank credit is the amount of bank notes and deposits subject to check. It is obvious that this meaning of "bank credit" differs from the first. Here it refers to the volume of bank promises-to-pay-on-demand which are acceptable to the public and are being held by it in lieu of cash. In reality it represents the volume of demand credit extended to the banks by their demand depositors and note holders. Putting it in another way, it represents purchasing power held in the form of bank obligations.

Each of these two definitions of bank credit has a special significance. The total loans and investments represent the volume of capital (measured in money) made available to borrowers through the medium of banks. The volume of deposits subject to check measures the extent to which the commercial banks are creating and furnishing the community with substitutes for specie. Not only does each of these concepts of bank credit have special significance, but they are also closely related to each other.

¹ For a detailed discussion of this point, see Currie, Lauchlin, "Credit in Contemporary Monetary Theory," *Journal of Political Economy*, 1933, Vol. 41, p. 58.

Of the total amount of deposits resulting from lending operations of banks, a certain proportion will become additions to the supply of demand deposit currency.

Factors Determining the Volume of Bank Credit

To understand clearly the factors which determine the volume of bank credit, we must examine the way in which it is built up. This requires the making of a number of assumptions. Let us suppose that: (1) banks find it necessary to carry cash reserves which equal 10 per cent of their demand deposits and 3 per cent of their time deposits; (2) the number of banks with proper capital and a reputation sufficiently good to command public confidence is adequate; (3) solvent borrowers are available in sufficient numbers to provide a demand for bank funds; and (4) the banks possess unused free reserves as the basis for more expansion. With the above assumptions in mind, let us trace the consequences of new bank loans.

If a single bank is in possession of excess reserves, it will be able to lend an amount equal to this excess. For example, Bank A finds itself with \$1,000,000 in excess reserves. It may lend \$1,000,000, giving the borrowers either cash or the right to demand cash by increasing the balances on their checking accounts. If the borrowers take cash, the statement of the lending bank will show an increase in loans and a corresponding decrease in cash. If the proceeds are taken in additions to checking accounts, the statement will show an increase in deposit liabilities instead of a decrease in cash. This may best be illustrated by an assumed example.

BANK A

<i>Before Lending</i>	<i>After Lending Cash</i>	<i>After Lending Deposits</i>
Assets:	Assets:	Assets:
Unused Reserve—	Unused Reserve—	Unused Reserve—
\$1,000,000	None	\$1,000,000
Loans—None	Loans—\$1,000,000	Loans—\$1,000,000
Liabilities: None	Liabilities: None	Liabilities:
		Demand deposits—
		\$1,000,000

Regardless of the form which the loan takes, Bank A will probably lose an amount of cash equal to the new loan. The borrowers will doubtless draw checks against new deposits created for them by the lending bank, so that for all practical purposes it makes little difference to the bank in which form the proceeds are taken. There has been some discussion among writers on bank-

ing as to whether or not the lending bank might, in fact, be able to retain part of the deposits credited to borrowers by virtue of the rule, frequently used and discussed elsewhere, that borrowers must carry deposit balances which bear some relation to the amount of loans.² However, this discussion need not concern us here. We may assume, quite correctly for purposes of our analysis, that the bank may lend what it has in the way of excess reserve and will lose cash to the amount of the new loan.³

Multiple expansion of bank credit on the basis of new reserves. If the \$1,000,000 excess reserve of the bank in our example consists of new cash not previously used in the banking system, it may be made the basis of an expansion of bank loans and deposits to some multiple of itself. This expansion process takes place as follows. The borrowed cash, whether withdrawn from Bank *A* at the time of the loan or later through checks, is redeposited in other banks. Hence, as a result of the \$1,000,000 loan by Bank *A*, other banks in the community receive new deposits of a like amount. However, in the hands of these other banks, which we may call Banks *B*, the new deposits are mingled with the other existing deposits and become subject to the law of large numbers, so that a relatively small cash reserve (10 per cent, perhaps) will suffice to protect the bank. Therefore Banks *B* will have \$1,000,000 in new deposits, requiring cash reserves of \$100,000. This leaves Banks *B* with free cash or unused reserves of \$900,000, which can be used as a basis for new loans of \$900,000. These new loans will result, as before, in a loss of cash equal to the amount of the loans and a corresponding expansion of deposits in other banks, which we shall call Banks *C*. This series of banks, after setting aside 10 per cent of their newly acquired cash as reserve against their new deposits, will in turn find themselves in possession of unused cash reserves which enable them to make new loans. Thus we see that, so long as borrowers are available, new loans will be made and new deposits created until the original \$1,000,000 in new reserves has been split up into 10 per cent reserves behind a new \$10,000,000 in

² For a discussion of this question, see Phillips, C. A., *Bank Credit*, New York, The Macmillan Co., 1920. For a later study, see Angell, James W., and Fiesek, Karel F., "The Expansion of Bank Credit," *Journal of Political Economy*, 1933, pp. 1-32, 52-193.

³ Any deposits which individual banks create out of forced balances are inert and unimportant from the standpoint of credit expansion. Because they require reserves, they restrain rather than increase the power of the banking system to create active deposit currency.

deposits.⁴ If part of the new deposits are put into time deposit form by the individuals who ultimately come into their ownership, the amount of cash reserves required will be less (3 per cent instead of 10 per cent), and the new cash reserves referred to above will support a larger volume of new loans and deposits.

The above illustration is perfectly accurate in its description of the theoretical aspect of the way bank credit is built up. The expansion process may and probably does in practice frequently take place in a somewhat different way. If all of the banks of the community came into possession of new reserves at the same time, it is possible that all would find themselves simultaneously making new loans and creating new deposits at a rate approximately proportional to the relative size of each bank. If this should happen, each bank would find itself gaining new deposits created by other banks at about the same rate that its own loans were tending to bring a loss of cash. To the extent that this is true, no bank would experience a loss of cash, and the expansion of loans and deposits could continue for each bank until its reserve ratio had fallen to the conventional figure. Whether or not the banks of the community expand their loans and deposits "in step," the principle of bank credit expansion is the same.

Contraction in volume of bank credit. The opposite procedure occurs when the supply of available bank reserves is reduced. Let us suppose that Bank A suffers a decline in its supply of legal reserves as a result of the export of gold or a sale of government securities by the Federal reserve bank. Assuming that the bank is "loaned up," and has no excess reserves, the loss of reserves requires that it take some action. It may, of course, borrow additional reserves at the reserve bank and thus avoid the immediate necessity of a reduction in credit. If, on the other hand, it decides to curtail its credit lines, the sequence of events will be the reverse of those of the expansion phase. Bank A can reduce its loans and investments by requiring its borrowers to repay their loans and by selling securities. But this process attracts an equivalent volume of cash away from the other banks in the banking system, for debtors will be unable to repay loans merely by relinquishing their claims (deposits) against Bank A alone. The repayment of loans to Bank A therefore must involve the sale of merchandise and securities to individuals and

⁴ The same effect on deposits arises from the purchase of securities by banks as from the making of loans.

firms who are customers of other banks. Similarly, if Bank *A* sells securities to replenish its cash reserves, that process will attract cash from the reserves of other banks. The loss of cash reserves by these other banks, which we may call Banks *B*, requires them in turn to reduce their loans and investments by an amount roughly equal to their reserve losses. This in turn attracts cash reserves from yet other banks which we may call Banks *C*, in an ever-widening circle. With each reduction in loans and investments, deposits decline correspondingly. The progressive shrinkage of credit, therefore, must continue until the deposit structure of the banking system has fallen to the point where the reduced volume of reserves bears the appropriate relation to deposits. Of course, if a bank or banks at any point in the process just described were to borrow new reserves at the reserve banks instead of reducing loans and investments, to that extent the shrinking of credit would be unnecessary.

Checks on the Expansion of Bank Credit

The maximum volume of bank loans and deposits which can be supported by a given cash reserve is subject to an additional limitation which has not yet been mentioned, arising out of the so-called "internal drain of cash into circulation." This refers to the need for additional cash for hand-to-hand circulation, which appears with an expansion in the volume of bank credit. As bank loans expand and new deposits are created, the expanding volume of demand deposits may be accompanied by a growth in trade and production and some rise in the level of prices. Gradually the uses for hand-to-hand currency rise through the increase of both payrolls and retail prices. When banks are free to shift their demand deposit obligations into the form of bank note currency, this demand for additional currency can be met without embarrassment. Where this shift cannot easily be made, as is the case in the United States, the currency for circulation must be taken out of the banks' own cash reserves. Therefore the ability of banks to expand credit on the basis of new reserves is considerably limited.

The amount of internal drain of cash reserves into circulation varies with different conditions. Where deposits are utilized to handle dealings in securities, an expansion of deposits is accompanied by a more belated demand for currency in circulation than if an increase in demand deposits were utilized to support a commodity price expansion. Some idea of the requirements for

circulation may be obtained from Table 20, which shows the money held by the public and the deposits subject to check at the end of June for the years 1914 to 1934.

TABLE 20
MONEY IN CIRCULATION AND DEPOSITS SUBJECT TO CHECK *

(In Millions of Dollars)

<i>End of June</i>	<i>Money Outside of Banks (1)</i>	<i>Vault Cash</i>	<i>Deposits Subject to Check (3)</i>	<i>Ratio</i>
1914.....	1,820	1,639	9,356	.195
1915.....	1,862	1,458	9,263	.201
1916.....	2,163	1,486	11,784	.184
1917.....	2,564	1,502	13,021	.197
1918.....	3,585	897	15,050	.238
1919.....	3,879	997	17,697	.219
1920.....	4,391	1,076	18,656	.235
1921.....	3,964	947	17,270	.229
1922.....	3,633	830	16,507	.220
1923.....	4,026	797	17,311	.232
1924.....	3,938	912	18,174	.217
1925.....	3,864	951	19,934	.194
1926.....	3,890	998	20,178	.193
1927.....	3,843	1,008	22,861	.168
1928.....	3,909	888	23,356	.167
1929.....	3,926	820	23,408	.168
1930.....	3,656	866	22,661	.161
1931.....	3,938	884	20,506	.192
1932.....	4,904	792	16,124	.304
1933.....	5,048	676	15,484	.326
1934.....	4,660	714	18,903	.247

* Data taken, with permission, from Angell, James W., *The Behavior of Money*, 1936, p. 175. For other estimates of money in circulation and deposits subject to check, see Currie, Lauchlin, *The Supply and Control of Money in the United States*, 1934, Chapter III, and Leong, Y. S., "An Estimate of the Volume of Deposit Currency in the United States," *Journal of Political Economy*, 1929, Vol. 37, p. 603, and "Money in Circulation," *Journal of Political Economy*, 1930, Vol. 28, pp. 184-187.

Another factor limiting the expansion of bank credit is found in the "external drain" of specie out of the bank reserves of one country into those of the rest of the world. This occurs when the banks of a country on the gold standard expand their loans and deposits excessively. This drain of reserves from one country to other countries resembles the drain of reserves which an individual bank experiences when it expands its loans "out of step" with the rest of the banking system. Such an expansion, we have seen, results in a loss of cash for the bank to the extent that its loan expansion is not counterbalanced by loan expansion by other banks. If the banks of any given country expand their loans and their demand deposits (including bank notes) at a rate

faster than that occurring abroad, there will result an increase in domestic prices of commodities and securities out of line with such prices abroad. This development tends to upset any existing international equilibrium of trade and indebtedness, to develop an unfavorable balance of debt, and to induce an export of specie, which, again, must come out of bank reserves.

Relation of time to demand deposits. The total volume of bank credit is intimately tied up with the volume of bank deposits and note currency, since the extension of credit by the banks in the first instance normally gives rise to additions to demand deposits. The proportion of deposits resulting from bank loans which will ultimately lodge itself among the savings and time deposits of the banking system depends upon the current willingness and ability of the income receivers, through whose hands the newly created demand deposits ultimately flow, to accumulate savings in the form of time deposits.

This tendency of savers to make time deposits rather than to invest in securities or real property affects the size of bank time deposits and the reserve requirements of the banks. It does not, however, seriously affect the volume of money substitutes available in the form of demand deposits. A moment's reflection reveals that this must be true. Let us take a simple hypothetical example. Suppose a commercial bank with excess reserves makes a loan and credits the borrower with the proceeds on his checking account; this borrower draws checks against his newly acquired balance and spends it. For the sake of our analysis, assume that the borrower pays out one-half of his borrowed bank balance to a businessman who is a customer of another commercial bank and who promptly deposits checks received from the borrower in his own bank. His bank in turn demands cash from the original lending bank, and its demand deposits therefore experience a net increase by that amount at the expense of the first bank.

Now let us assume that the original borrower pays the remaining half of his borrowed funds to some individual who promptly deposits the whole sum in a savings bank. The savings bank follows the usual procedure of presenting the deposited checks for payment and takes the cash. When the savings bank makes a loan or invests the newly acquired funds in securities, it is probable that the borrowed funds will be put into the hands of some individual or firm desiring to utilize them for current purposes. Otherwise they would not be borrowed. When this occurs, the funds borrowed from the savings bank will reappear

as demand deposits in commercial banks. In the end, the volume of demand deposits will be approximately just as great as if no increase in time deposits had taken place. The only effect will be a slight reduction due to the necessity for setting aside a small cash reserve against the new time deposit, which renders the savings bank incapable of lending all that it obtained in cash deposits.

Any change in the desire of the public to hold time deposits instead of security investments, therefore, has some effect on the expansion power of the banking system. Other things being equal, an increase in the public's desire for time deposits reduces the power of the banks to create and support demand deposits on a given volume of reserves by requiring that part of the reserve be set aside against the new time deposits.

There is, of course, the possibility that businessmen may be tempted to switch part of their demand deposits into time deposits in order to earn interest. To the extent that they succeed in their attempt to eat their cake and have it too and are able to care for their usual business needs with a smaller volume of demand deposits, the shift of deposits from demand to time form would tend to be somewhat inflationary. It is unlikely that any very material change of this sort will occur under the existing rules governing the withdrawal of time deposits.

Demand deposit currency. Although it is true that the lending operations of commercial and savings banks give rise to both time and demand deposits, special attention must be directed toward the latter, which constitute current purchasing power equivalent to money in the hands of the owner. The demand deposits subject to check and bank notes in circulation make up the bulk of the cash balances of individuals and firms of the United States. Under the present laws, gold itself, which is the monetary standard of the country, cannot be obtained for circulation but must remain in the Treasury as the ultimate backing for our bank deposit and bank note currency. The volume of "bank money," as it is sometimes referred to, is of vital importance in that its abundance or scarcity has some bearing upon the question of the general level of prices. Moreover, the fact that bank money makes up the bulk of our usable money presents a serious problem in that its quantity is largely the result of, although it is by no means synonymous with, variations in the volume of bank loans and investments.

Elasticity of the Supply of Bank Credit

The problem of elasticity of bank credit must be examined from several angles. First, there is the question of elasticity from the standpoint of the lending power of the banks. The business community's desire for bank credit is subject to change from time to time. For example, the business operations of the country experience decided seasonal swings. During the active season, borrowers desire more accommodation at the banks, while during the slack season, bank loans tend to be retired. Likewise, during cyclical upswings, businessmen are anxious to expand their capital holdings and resort to the banks for loans. Now, granting that such variations in business activity are a fact to be reckoned with, the banking system which functions smoothly is one which can accommodate itself to these variations in the demand for loans without strain or embarrassment. In other words, it possesses "elasticity."

A second aspect of bank credit elasticity has reference to the question of hand-to-hand currency. This is partly a question of the need for meeting the internal drain accompanying an expansion of demand deposits as bank loans increase; also, it involves the pronounced changing seasonal requirements for currency in circulation. During seasons when business requiring currency is active, such demands rise. This is particularly true of the autumn seasonal expansion, which is augmented by the agricultural harvest and marketing operations and the Christmas holiday peak. This need for currency would present no difficulties that were different from those arising from the need for new bank loans if banks were able to convert their demand deposit obligations into circulating notes at will. Since the ordinary bank does not have this privilege, it must meet this demand for additional currency by paying out part of its cash reserve. This, naturally, is a painful process, since a dollar paid out into circulation reduces by that amount the lending ability of the bank making the payment, and reduces by several times that amount the lending power of the whole banking system. It is not surprising, therefore, that the question of "elasticity" of the banking system has figured so prominently in discussions of banking problems.

The problem of elasticity of bank credit seems to have but one solution. That solution is found in the possession of unused reserves by the banks in times of slack demand for credit and currency. Only here can the basis for the expansion of bank loans

and the paying out of cash into circulation be obtained. Given an adequate supply of unused reserves, the banks can meet the demand for new loans and can pay out cash into circulation as needs arise. To be sure, the ability to issue notes freely would be more advantageous because the volume of unused reserves needed to provide elasticity would then be somewhat less. Elasticity, however, can be obtained without bank note issue.

A third aspect of the problem of elasticity of bank credit should be considered here, even though a protracted discussion is not appropriate in this connection. The economic world is interested in the elasticity of bank credit and currency, because it affects not only the ability of businessmen to obtain accommodations but also the volume of deposits subject to check provided by the banking system. If one accepts the proposition that there is any relation between the volume of money and the general level of prices, the volume of money acquires significance. Since the actual money consists mainly of bank notes and demand deposits, the volume of bank deposit and note currency is therefore equally significant. In respect to the volume of such bank money, one may take the position that its volume should vary in such a way as to contribute stability to the economic world.

A troublesome question arises in respect to the elasticity of bank credit during the up-and-down swings of the business cycle. For example, during the upswing of the cycle, both borrowers and bankers are inclined to expand the volume of bank credit at a rate which leads to price inflation and overexpansion in investment. On the other hand, during depressions the opposite result appears. Credit shrinkage at such times tends to accentuate the fall in prices and the decline in business activity. This tendency of bank credit to overexpand on the upswing and to overcontract on the downswing of business is sometimes referred to as the "perverse elasticity" of the banking system.

The standard for determining the correct volume of bank credit is not easy to establish. Shall it be a stable level of prices in the short run or in the long run? If price stability is wanted, what price level shall be singled out for stabilization? Or is there some other standard? Once the standard has been determined, is there any practicable method for bringing it about? The answers to some of these questions must be postponed until our later study of monetary theory. The problem of setting up the machinery for control of the volume of bank demand deposit credit will be considered later in connection with the Federal Reserve System.

The Relation of Central Banks to the Expansion of Bank Credit

Perhaps the outstanding distinction between a central bank and other banks lies in the fact that the central bank assumes the responsibility, through either law or custom, of providing the banking system with the unused reserves necessary to a smooth and satisfactory functioning of the whole system. This carrying of unused reserves by the central bank is made possible by some curbing of the profit motive. This curb may arise merely from custom and recognition of public responsibility on the part of the directors of the central bank, as in the case of the Bank of England, or it may be provided in the form of governmental representation in the management and a limit on the dividends which can be paid by the central bank on its stock, as in the case of the Federal reserve banks.

The absence of the profit motive as a determining factor in central bank management is necessary if such a bank is to be free from the pressure felt by the managers of private banks. Private bankers seek to maintain their loans and investments at the maximum consistent with the safety of the individual institution. Such an attitude is inconsistent with the carrying of unused reserves. A central bank has the duty of maintaining its reserves of standard money in an amount considerably above the minimum required by law or necessity. This being the case, it is always ready and able to furnish other banks with cash by making them loans or by buying (rediscounting) part of their assets. It has become the habit for other banks to carry their cash reserves in the form of obligations of the central bank. For example, in the United States the legal reserves of member banks consist of deposits with the Federal reserve banks, while in England the reserves of the ordinary banks are mainly in the form of deposits with the Bank of England. In the case of both the English and the American "member banks," till money consists to a large extent of notes of the central bank.

The advantage of this arrangement of the cash reserves of banks being carried in the form of obligations of the central bank is that the cash resources of central banks are thus augmented. New specie coming into the country finds its way into the reserves of the central bank. When banks resort to the central bank for loans to increase their cash reserves, the central bank may create additions to its obligations in the form of deposits or notes. Thus it is possible for the central bank to increase the reserves of the other banks to a much greater extent than would be possible

if the borrowing banks were unable or unwilling to take central bank obligations in place of specie. If the central bank were compelled to make its advances to other banks in specie, each dollar of funds advanced would reduce its cash resources by the full amount. However, if it makes its advances in the form of notes or deposits credited to the borrowing or rediscounting bank, the cash holdings of the central bank are unaffected. For example, the Federal reserve banks are now required to carry reserves in gold certificates equal to at least 25 per cent of each dollar of deposits and Federal reserve notes. Thus, if the Federal reserve bank should lend \$1,000,000 to a member bank and pay out actual standard money, its cash reserves would be reduced by the full amount. But if the member bank received the proceeds in the form of credits on its reserve account deposited with the Federal reserve bank, the process would tie up only 25 per cent of the \$1,000,000 or \$250,000. Similarly if the member bank received Federal reserve notes, \$250,000 in gold certificates would be tied up. Thus the lending power of the central bank and its power to provide elasticity is expanded four times by the practice of paying out central bank obligations instead of cash. In addition, the cash of the reserve banks is vastly expanded by the practice of pooling the cash holdings of the member banks as deposits of legal reserves with the Federal reserve bank.

A serious question may be raised as to the real advantage of having a system possessing such a high degree of elasticity. To the extent that it facilitates the smooth working operations of the banking system, it is beneficial. To the extent that it permits the building up of a pyramid of deposit currency which is inherently unstable and subject to corresponding shrinkage in case of loss of part of the gold base, its advantages may be questioned. It also invites, in times of adequate reserves, an expansion of credit and speculative rising prices.

Reserve ratios and the volume of bank credit. Earlier in the chapter we made certain assumptions preliminary to analyzing the way in which bank credit is created by the banking system. One of our assumptions had to do with the ratio of cash reserves to deposit liabilities. Our analysis was made on the rather simple assumption that reserves against time deposits were 3 per cent and against demand deposits 10 per cent.

This assumption was not far from the facts for member banks before the increases in legal reserve requirements beginning in August, 1936. The 7, 10, and 13 per cent reserve requirements

against the demand deposits of members averaged about 10 per cent for all the demand deposits. However, one qualification must be made. The assumed percentage reserves constitute only the legal reserves for member banks. In addition, the banks must carry cash for till money, which should be added to the legal reserve requirement. Finally, banks normally carry deposits in other banks as part of their working reserves. One may properly count the carrying of interbank bankers' balances as one of the necessary costs of bank credit, using this term in the sense of total deposits exclusive of bankers' balances. Such bankers' balances cause an increase in the reserve requirements for the banking system because, although they are deducted from demand deposits in finding the base for calculating legal reserve requirements of the depositing banks, they require somewhat higher reserves in the big city depository banks. The cash reserves behind the deposits of member banks other than bankers' balances thus consist of: (1) the legally required reserves; (2) the till money cash which banks find necessary; and (3) the legal reserves required to support bankers' balances or interbank deposits.

The volume of interbank deposits carried by the banking system bears no rigidly fixed relation to the volume of other deposits. In times of slack local demand, country banks have, in the past, tended to deposit their excess funds with large city banks to obtain the interest offered by the city banks. This movement of funds from the country banks to city banks increased the volume of bankers' balances against which reserves had to be carried. During times of active local demand for loans, country balances with city banks were reduced to the minimum required for working reserves, with a consequent reduction in the volume of reserves required to support bankers' balances. The prohibition of the payment of interest on demand deposits under the Banking Act of 1933 was expected to reduce this variation in the volume of bankers' balances, but country banks still continue to deposit excess funds with their city correspondents. Even in the days of fluctuating bankers' balances, a residual amount of such interbank deposits was normally maintained, and the higher legal reserve requirements against them constituted part of the reserve costs of maintaining the structure of bank deposits.

Economic Effects of Commercial Banks

Bank credit and the supply of capital. The deposits of savings banks represent the current capital accumulations of one

particular form of saver. A person with income in excess of his spending deposits his excess funds in a savings bank, thus committing part of his current income to the benevolent hands of the bank. The bank gives the depositor a savings deposit, with all the perquisites thereof, and takes possession of the "saved" part of his income, which is turned over to some borrower. If the funds are wanted for productive purposes, the borrower spends them for capital goods. Thus there is diverted from the production of consumption goods to the production of capital goods part of the current productive labor of the community.

There are only two essential differences between this process of saving through the savings bank and a more direct form of investment such as the purchase of bonds. When it is done through the savings bank, a residuum in the form of a savings deposit remains. This adds to the total volume of bank deposits, since the saved funds deposited in the savings bank reappear again in the hands of some commercial bank as a demand deposit. In the case of direct investment, there is no net addition to the bank deposit structure. The demand deposit of the investor is merely exchanged for the securities bought from the borrower seeking capital. The second difference is that the new deposits growing out of this form of saving through the savings bank require cash reserves, and hence influence the volume of bank credit that can be created on a given volume of standard money reserves. We may properly conclude, therefore, that the expansion of savings bank deposits represents the expansion of savings in the manner of any other form of savings and investment.

An interesting question arises in connection with the expansion in the deposits of commercial banks. We know that at certain times, particularly during periods of prosperity, commercial bank credit in the form of deposits subject to check expands rather rapidly. Furthermore, the country usually experiences a long-run growth of its demand deposits. What are the consequences of this expansion? We have already examined the relation of the commercial bank and its demand deposits to the mobility of working capital. At any given time the demand depositors are holding the promises of banks to pay cash in lieu of cash itself or capital goods, and the borrowers, as a class, are enabled to obtain possession of capital goods by virtue of their ability to trade their borrowed deposits for goods.

Forced saving. What is the effect on the supply of capital goods of an expansion in the loans and deposits of commercial banks? One must notice this distinction between the expansion

of the loans and deposits of commercial banks and those of savings banks. Capital accumulation through deposits of the savings banks must wait upon the willingness of the saver to set aside part of his income. However, capital accumulation through the expansion in deposits of commercial banks seems not to await the pleasure of the saver in the ordinary sense of the word. Rather, if the commercial banks find themselves with excess reserves and anxious borrowers, they make loans and create new deposits which are not of the innocent savings bank variety but full-grown, virile, readily acceptable money substitutes or bank money in the form of demand deposits. Thus the effect of the expansion of commercial bank credit differs from that of the growth of savings deposits.

How does this expansion affect the formation of capital? Let us suppose that the banks expand their loans and demand deposits by \$1,000,000. The borrowers come into possession of that amount of new purchasing power which did not previously exist, and which they promptly spend in the market for, let us say, capital goods. The sellers of these goods accept in return the newly created demand deposits in the banks as the equivalent of cash. It is hardly proper to speak of these sellers who exchanged their goods for the new demand deposits as being new savers of capital, for they would probably have sold their goods anyway. (We may disregard the possibility that they may part with more goods than is customary with them because of a slightly higher price.) Is there, then, any actual increase in the supply of capital goods resulting from this credit expansion? The answer is to be found in the effect of this new supply of borrowed bank deposit purchasing power upon all other persons whose purchasing power remained unchanged. Unless industrial output is increasing, the spending of the new deposits by the borrowers must inevitably result in the forcing up of prices of the things bought. Only thus can the borrowers succeed in buying goods which would otherwise have been bought by someone else.

Now, if the new deposits are thrown into the market and prices are forced up, and if the supply of the thing wanted should be so inelastic that no new supply is available regardless of the price, the net effect of the borrowing would be to enable the new borrowing spenders to wrest part of the existing supply of capital goods from those who would otherwise have been the purchasers. Obviously, such a result would have no effect on the supply of capital. But normally, there is some elasticity in the supply of any capital good. Either labor and materials are diverted

from the making of other capital goods by the superior return to be had in the industry feeling the impact of the new borrowers' demand, or they may be diverted from the making of consumption goods. Only in the latter case does real saving appear. Since the factors of production for making consumption goods (particularly labor) coincide to a considerable extent with those required for making capital goods, any pronounced expansion in purchasing power released into the community through commercial bank loans and deposits is almost certain to result in some substantial diversion of effort from the making of consumption goods into the making of capital goods. It is quite possible, however, that the new purchasing power will be spent to employ labor, resources, and capital that have hitherto been idle for one reason or another. To the extent that this is so, new capital is created in place of what would be mere idle time. It would not be amiss to point out the fact that the same argument regarding the effects of new purchasing power expended applies to any increase in the velocity of the circulation of money and deposits already in existence and to the expansion of money by the government.

When bank credit expands at a time when industrial output is expanding, the results are somewhat different. Borrowers, spending their newly acquired funds, cause an expansion in the volume of production out of which the needed additions to the supply of capital can be obtained. In a sense, the capital thus obtained is the result of what would otherwise have been idle time, for without the expansion in bank credit the volume of production might not have materialized. In such a case, the "saving" is accomplished by the aggregate of individuals who absorb the increased quantity of money into their money balances.

Advantages of bank deposit and note currency substitutes for specie. The use of substitutes for specie in the form of paper money and checking accounts is ordinarily assumed to contain some social advantage. Such a phrase as "economizing the use of specie" is commonly used as evidence of such advantage. Just what such expressions actually mean, however, is not apparent from a superficial glance.

To maintain its price level in equilibrium with that of the rest of the world already using specie substitutes, a country without substitutes for specie would require more specie per unit of economic transactions than would its neighbors. If it were to introduce the use of specie substitutes in the form of bank

currency, the immediate effect would be a tendency toward increased domestic prices, an unfavorable balance of international indebtedness, and eventually a loss of specie to foreign countries until a new international price equilibrium was again established. In the meantime, the country introducing bank currency would have traded its nonproductive specie for imports of supposedly useful goods. We may conclude that for any single country there is an advantage in using bank currency, since to do so enables that country to trade part of its specie for other goods. But, for the world as a whole, is there any general advantage arising out of the use of bank currency? In the end, is not the only change to be found in the fact that the world is able to enjoy a higher price level than if it limited itself to specie currency? It is a well-known economic principle that the particular price level, if stable, is not the important thing. It is the change from one to another that causes trouble. Is there, then, any advantage which accrues to the world out of the use of bank currency? The answer is "yes." In fact, there are two sources of economic gain arising from the use of specie substitutes. First, the higher price level made possible by specie substitutes tends to divert labor and capital away from the relatively futile occupation of digging gold out of the ground and piling it up in the monetary systems. Second, the higher price level has the effect of increasing the proportion of gold actually mined which goes into industrial uses. Thus, in the end, the advantage to the world of "economizing in the use of specie" amounts to this: that less effort is expended in mining gold, and more of what is mined finds its way into industrial uses.⁵

A more doubtful advantage of bank credit currency can be found in the fact that, in periods when the volume is expanding, a measure of "forced saving" takes place. This is especially convenient as a means whereby governments of countries at war are able to wrest supplies from the unsuspecting people with a minimum of immediate inconvenience and complaint. Of course, this advantage does not rest exclusively with bank credit, for it is equally available through the direct issue of government paper money. In addition to the convenience afforded governments at war, the expansion possibilities of bank credit during the prosperity period of the business cycle facilitates the delightful illusion which characterizes boom periods.

⁵ For a development of this point, see Mints, L. W., "The Elasticity of Bank Notes," *Journal of Political Economy*, August, 1930.

CHAPTER XVIII

THE EARLY BANKING SYSTEM OF THE UNITED STATES

Source of banking institutions. Economic institutions, in which category the banking system may be included, have their roots far back in the experiences of the past. They develop gradually out of the trial-and-error practices of economic society, but are constantly being modified by social pressure for reform or control. It follows, therefore, that a clear view of an existing institution can best be gained through some historical perspective. For this reason we approach the present banking system of our country by a brief study of past developments. In this way the significance of many of the features of the present banking structure are revealed.

Banking Before the Civil War

Problem of incorporation. There was considerable dispute in the fifty years preceding the Civil War as to the propriety of confining banking privileges to incorporated banking firms. In general, banks of deposit were permitted to operate privately, while banks with the right to issue notes were required to incorporate, although private banks frequently issued notes in spite of the efforts of the law and the incorporated banks to prevent them from doing so.

Advantages of note issue. Before the Civil War, bank notes furnished the major part of the nonspecie currency of the country. Outside the cities particularly this was the case. The use of checks drawn against demand deposits is feasible only when individuals using them have confidence in the credit standing and honesty of each other and when facilities are available to accomplish prompt presentment. Naturally, at a time when transportation and communication were but poorly developed, the use of engraved notes of banks payable to the bearer was

superior in most cases to the use of checks. The relatively great importance of bank notes is well illustrated by the reported condition of 11 New York City and 11 country banks in 1829.¹

	<i>Loans and Discounts</i>	<i>Capital</i>	<i>Notes</i>	<i>Deposits</i>	<i>Cash & Due from Banks</i>
City banks	\$16,702,467	\$11,252,160	\$3,528,623	\$4,448,088	\$2,970,978
Country banks	6,185,520	2,906,413	3,137,510	1,042,865	1,127,124

It is not surprising, therefore, that the banking legislation of the times placed a good deal of emphasis upon regulation of the note-issuing powers.

Evils of bank note currency. The characteristic of bank notes which makes them adaptable to the economic circumstances of pioneer societies is also a source of weakness, as the experiences of the early banks indicate. Bank notes could be issued in the absence of any effective means for presentment and redemption, since they bore the appearance of money itself. It followed, therefore, that notes sometimes remained in circulation, and only sporadic attempts were made to redeem them. This fact opened the way to abuses. A bank which was able to keep a large volume of its notes in circulation could expand its loans by this amount. Indeed, some bankers even exchanged bank notes for property. Under such circumstances it was easy for banks to issue an excessive quantity of notes which could not be redeemed in specie if occasion demanded. The banker, lulled into repose by his success in avoiding redemption, often maintained an entirely inadequate specie reserve. Further, there was a strong temptation to issue bank notes against purely speculative ventures, thus feeding the fires of speculative fevers and causing subsequent collapse and disaster.

Restrictions on note issues were lax and were usually made in terms of some proportion of the bank's capital stock. This was often meaningless, because capital stock was normally not paid for in specie. It was almost a rule that stockholders should be allowed, directly or indirectly, to pay for their stock with their own promissory notes. The notes of the less reliable organizers of banks were startlingly elastic and valueless, so that the foundation for bank note issues was often precarious from the start.²

The bank notes of the times provided an unsatisfactory cur-

¹ Chaddock, Robert E., *The Safety Fund Banking System in New York State, 1829-1866*, N. M. C., 1910, pp. 239-240.

² Dewey, Davis R., *State Banking Before the Civil War*, N. M. C., 1910, pp. 5-20.

rency in many ways. Redemption was made difficult by the fact that banks were deliberately set up in remote and inaccessible places, far from the centers of trade. The notes were then loaned by agents in other districts. In the West such banks earned the title of "wildcat banks," because of the penchant of their organizers to locate deep in the woods, out of reach of such disagreeable persons as brokers and agents of other banks who were bent upon presentment of bank notes for specie. Not only were bankers prone to set up their banks in inaccessible places, but they also put many obstacles in the way of payment to persistent collectors who actually discovered the den of the "wildcatter." A favorite practice was to pay out small change, a process making for prolonged periods of delay and embarrassing transportation problems. Moreover, public sentiment favored the bankers by condoning the ingenious practices developed to avoid redemption.³

Evil effects of unregulated note issue. The effects of these conditions on the business affairs are well described in the following quotation from Whitney's *The Suffolk Bank*:⁴

The business man of today knows little by experience of the inconvenience and loss suffered by the merchant of sixty years ago arising from the currency in which debts were then paid. . . . The merchant of 1818, receiving payment in bank-notes, assorted them into two parcels, current and uncurrent. In the first he placed the notes issued by the solvent banks of his own city, in the other the bills of all other banks. Upon these latter there was a discount, varying in amount according to the location and the credit of the bank issuing them. How great the discount was he could learn only by consulting the "Bank Note Reporter," or by inquiring at the nearest exchange office; and he could avail himself of them only by selling them to a dealer in uncurrent money. He could neither deposit them nor use them in payment of his notes at a bank. The discount on them varied from one per cent upward, according to the distance the bills had to be sent for redemption and financial standing of the bank by which they were issued. Many banks were established in remote places mainly for the purpose of making a profit on circulation. The more distant they were from the business centers, the more expensive it was to send their bills home for redemption, and the more difficult it was for the general public to know their true financial condition. . . .

Experience of Boston banks. Not only were businessmen in general subjected to the troubles of an uncertain currency, but individual banks, like the Boston banks, suffered from a form of unfair competition. The situation was such that they found it difficult to maintain their notes in circulation in the face of the

³ *Ibid.*, p. 74

⁴ As quoted by Root, L. Carroll, in *Sound Currency*, June 1, 1895, p. 276.

flood of bank notes put out by banks in surrounding areas. In those days the lending power, and therefore the profits of a bank, were influenced to as great an extent by the bank's ability to keep its notes in circulation as by the size of its deposits. The predicament of the Boston banks is seen in the fact that:

. . . the notes of the banks in New York and all the New England States—many of them of doubtful solvency—were spread broadcast over the country and found ready acceptance even at Boston, where they almost monopolized the field. Scarcely a dollar of Boston paper could be seen. The reason was not far to seek. The notes of foreign banks, so long as they were known to be solvent, passed readily from hand to hand in ordinary business transactions, but at the banks they were not accepted. Persons having payments to make at the bank therefore found it advisable to lay aside any notes of Boston banks which might come into their hands, as such notes and specie were the only forms of currency accepted at par by the banks, while foreign notes which were readily accepted in business were paid out again and thus kept in circulation. The ordinary method of procedure when the holder of any of these foreign bills wished either to make a payment at a bank or to procure specie was to exchange them at a discount with some one in Boston who would give him Boston money, instead of sending them to the issuing banks for redemption in specie. . . .

A committee of the directors of the Suffolk Bank, April 10, 1824, laying before the other banks of Boston their plans for checking the enormous issues of the country banks, especially those of Maine, called attention to the fact that the 11 banks of Boston possessed a capital of \$11,150,000 out of a total for all New England of less than \$20,000,000; yet the country banks furnished \$7,500,000 of the circulating medium, while the banks of the city with a capital more than equal to all the rest, kept in what might be fairly termed permanent circulation, only \$300,000.⁵

Action of the New England Bank. The inconvenience to business had been somewhat reduced by the action of the New England Bank, which in 1813 began to accept bank notes on deposit at such discount as actually equalled the cost of sending the notes home for redemption. This had the effect of reducing the discount on "foreign" notes to some reasonable and regular proportion. It did not abolish the discount altogether, and the disadvantage which the Boston banks suffered remained. It was not until 1825 that the now famous Suffolk Bank System instituted a "par collection system" for bank notes and abolished the discount on foreign bank notes.

The Suffolk Bank. The Suffolk Bank of Boston agreed to act as a collection agency for the other six banks of the city. It received notes on out-of-town banks, originally at a slight discount but later at par. In turn it made arrangements with the

⁵ *Ibid.*, pp. 277-279.

other New England banks to redeem their notes in Boston, provided such banks maintained a deposit of \$2,000 or more, free of interest, in addition to the amount required to redeem the notes. In return for this the banks maintaining deposits with the Suffolk Bank were allowed to deposit, at par for credit, on the day following their receipt, all notes of any New England bank of good standing. A bank which refused to join the system found its notes presented for collection at the bank itself in the same manner as the Federal reserve banks presented checks on non-par banks during the "par collection controversy." The results were favorable. The majority of the banks found it expedient to co-operate. Within six months' time, the circulation of Massachusetts banks outside of Boston decreased \$382,371, and that of the Maine banks decreased \$336,819. The circulation of the Boston banks, in the meantime, increased \$283,497.⁶ Thus New England was possessed of a high-grade currency acceptable at par and subject to the check of continuous redemption.

Need for regular presentment. The effect of regular presentment for redemption should be emphasized. Under such circumstances it is impossible for any individual bank to make more loans, create deposits, and issue notes at a rate faster than that at which all banks are expanding, unless that bank is prepared to withstand a drain of cash through redemption equal to the new loans made. It is necessary, therefore, that each bank carefully watch its specie reserve and avoid too rapid loan expansion. Such a situation is an invitation to the cautious and conservative loan policies which are so necessary for a sound banking system.

The First Bank of the United States. Even a brief discussion of early banking history of the United States cannot omit reference to the two banks of this period which were chartered by the Federal Government. The First Bank of the United States was established in 1791, with its main office in Philadelphia and branches in New York, Boston, Baltimore, Washington, Norfolk, Charleston, Savannah, and New Orleans. It issued a limited volume of bank notes, acted as fiscal agent for the government, and served to restrain excessive note issue of state banks, which were becoming numerous, by forcing them to redeem their notes in specie. This it could do by rejecting notes which were not convertible and by making such notes nonacceptable by the Treasury, for which the Bank was fiscal agent. Unfortunately, upon the expiration of its charter in 1811, the friends of the Bank

⁶ *Ibid.*

were unable to overcome the political opposition of those who feared the growth of money monopoly and the extension of the power of the central government. Much was made of the fact that British capitalists owned over two-thirds of its capital. This argument was particularly telling in view of the strained diplomatic relations then existing with England. The charter was not renewed, and the only uniform, sound bank note currency capable of wide circulation in the country at that time was lost, along with a powerful and effective aid to government financial operations. The country was left to face the financing of the War of 1812 with only the unreliable state-chartered banks to support it.

The number of state banks increased from 88 to 208 in the four years from 1811 to 1815, while their note issues increased from \$23,000,000 to \$110,000,000. In 1814 most of the banks outside New England suspended all pretense of redemption of notes in specie, and the currency system of the country was badly demoralized. It was the opinion of Secretary Gallatin that much of this could have been avoided had the First Bank of the United States continued to function.⁷ The suspension of specie payments by the state banks sadly embarrassed the government, which was unable to transfer what funds it possessed in the form of bank deposits from one district to another to meet varying needs.⁸

The Second Bank of the United States. The chaotic condition of the banking system led many to favor a new bank, similar to the First Bank of the United States, and on April 10, 1816, a bill was approved by President Madison granting a charter for the Second Bank of the United States. During its first two years the Bank was the victim of mismanagement, but beginning with 1819, under the new and conservative management of Mr. Langdon Cheves, it assumed its place as an effective, conservative bank and fiscal agent for the government. Through its branches it forced specie redemption upon the state banks. Bank notes deposited with it by customers or received from the Treasury as governmental revenues were presented for redemption. Banks which refused to redeem their notes found them rejected and not acceptable for payments to the Treasury.

The action of the Bank in exerting pressure upon state banks to maintain their notes at par provoked the hatred of banks of the West and South, which had been the worst offenders against

⁷ Hepburn, A. Barton, *A History of Currency in the United States*, 1915, p. 90.

⁸ White, Horace, *Money and Banking*, 1896, p. 272.

sound banking. Depression brought distress to debtors, who were easily persuaded that the Second Bank of the United States was causing all their troubles by curbing the activities of the state banks. When the time of the expiration of the old charter arrived, the Bank was embroiled in a political quarrel with President Jackson, and a renewal of its charter by the Federal Government became impossible. The Bank therefore disposed of its branches, obtained a charter from the state of Pennsylvania in February, 1836, and for some time continued to operate. After difficulties in the panic of 1837 it finally closed in 1841.⁹

The Safety Fund System of New York. Another early attempt to improve banking conditions took the form of a mutual guaranty fund out of which creditors of failed banks were to be paid. The state of New York adopted the "Safety Fund System" in 1829. Between that year and 1839 new charters were granted to 93 banks under the Safety Fund law. These banks were chartered by a special act of the legislature but were required to conform to the law as a prerequisite to obtaining a charter.

Each bank which obtained a charter was required to contribute annually to the fund $\frac{1}{2}$ per cent of its paid-up capital until it had paid in an amount equal to 3 per cent of its capital. After the assets of failed banks had been liquidated, any deficiency owed to the banks' creditors was to be paid out of the fund. As the fund became depleted, further assessments of the same nature were to be made.

Contributions to the fund were first made in 1831. In 1841-42 eleven of the safety-fund banks failed with an aggregate capital of \$3,150,000. The sum which had been paid into the fund by these banks was but \$86,274, while the amount required for the redemption of their circulation was \$1,548,588 and for the payment of claims of their other creditors \$1,010,375, making a total of \$2,558,933. According to the report of the State comptroller made in 1849, the whole amount contributed to the fund down to September 30, 1848, was but \$1,876,063; and even if full payments as required by law had been made by all the banks organized under the system, the fund would still have been insufficient to pay the deficiency occasioned by the insolvency of these eleven banks. This deficiency was subsequently provided for by the issue of a 6 per cent stock by the State, to be re-imbursed largely by new contributions from the banks. During the year 1842 the act was so amended that the safety-fund became a security only for the notes in circulation and not for the other debts of the new banks; such banks were still required to obtain special charters, as before the passage of the act. Another feature of the system was the appointment of three bank commissioners to supervise and inspect the several banks, and report the result of their investigations to

⁹ White, *op. cit.*, pp. 277-313.

the legislature annually. It was supposed that in a commission consisting of three persons each would be a check upon the others. To effect this purpose, the governor and senate were to appoint one commissioner, the banks in the southern portion of the State another, and the remaining banks a third.¹⁰

By a change in the state constitution in 1846, the noteholders not only were made prior claimants against the fund but also were given prior claim against the assets of failed banks. The preference shown noteholders at this time has continued down to the present day. In all banking legislation in the United States noteholders are given special consideration. This was true of the national banking system when national bank notes were being issued, and it is still true of Federal reserve note issues. The reasons generally given for granting preference to noteholding creditors over deposit-owning creditors of banks are: (1) Bank note holders are involuntary creditors, since they receive bank notes of all kinds in the ordinary course of trade, with little opportunity to reject the unsound notes. Depositors, on the other hand, may choose their bank. (2) Noteholders are usually working people, of the poorer classes, who are less able to bear losses due to bank failures than the more well-to-do classes who carry bank deposits.

The Safety Fund System suffered from the fact that contributing banks paid in proportion to their capital rather than to their notes. Nevertheless, it achieved a remarkable success in protecting the noteholders against ultimate loss from failure. The annual contributions for its period of operation (1830 to 1866) averaged slightly less than $\frac{1}{2}$ per cent of the banks' capital. The total amount collected from the banks amounted to \$3,119,999, while total payments were \$2,600,000. The difference was the interest paid the state for its aid during times of stress.¹¹

The free banking system. The state of New York inaugurated another plan, which was destined to color the banking practices of the United States, when it adopted the "free banking system" in 1838. This came as a reaction against the banking monopoly created by special chartered banks.

Free banking involved two principles. First, banking was to be made a "free trade," open to all without discrimination or favoritism. Second, banks were to issue notes only against the security of proper collateral sufficient to insure ultimate redemption. It was incumbent upon the state, therefore, to lay down

¹⁰ *Report of the Comptroller of the Currency, 1876, pp. XXI-XXIII.*

¹¹ Chaddock, *op. cit.*, p. 336.

the rules under which banks might be organized and notes issued.

At first, the free banking system worked badly in New York. The comptroller was authorized to issue circulating notes to any association organizing itself as a bank and depositing with him the obligations of the United States or any individual state, or real estate mortgage bonds. Twenty-nine free banks failed during the first five years, with resultant substantial losses to note-holders. These banks had an aggregate circulation of \$1,233,-374, secured by stocks, bonds, and mortgages having a face value of \$1,555,338. On liquidation, however, they were sold for only \$953,371, which permitted payment of the bank notes at 74 cents on the dollar. To correct the evil of depreciation in the value of securities pledged for the protection of bank notes, amendments were made in the law to permit only the use of bonds of the United States and the state of New York and qualified mortgages.¹²

The free banking system proved popular. Ohio adopted it in 1845, Illinois in 1851, Indiana in 1852, and Wisconsin in 1853. Free banks were for the most part primarily interested in the issuance of notes. Since the system was designed to insure the safety of bank note holders, it is not surprising that little, if any, provision was made for regulating banks except in regard to note issue. Because of the acceptance of low-grade securities as collateral for the notes, even protection for noteholders was not achieved. The outbreak of the Civil War found many of the free banks in Illinois owners of obligations of southern states which rapidly fell in value.

Evils of free banking. The system of free banking naturally led to many abuses. Principally, it facilitated the development of wildcat banking, as is well illustrated by the following quotation:¹³

In practice it was hardly necessary for the bank to have a place of business if its notes were secured; and I remember that in some instances where attempts were made in Illinois to present notes for redemption at the bank's counter no counter was found, but merely a hired room in some place remote from any railway station and situated on some bottomless prairie road. As the country banks had a decided advantage over the city banks in the way of nest-hiding, the latter resorted first to the device of not paying out their own notes at all, but borrowing those of Eastern banks instead. Facilities for travel were too good, however, in the East. The notes paid out in Illinois

¹² *Annual Report of the Comptroller of the Currency*, 1876, pp. XXIII-XXIV.

¹³ White, Horace, "Wildcat Currency Experience," *Sound Currency*, December 1, 1894.

and Wisconsin went home to be converted into New York and Boston funds too rapidly. So the city bankers went to the State of Georgia and started a lot of subordinate banks there, with whose notes they flooded the Northwest from Chicago as a radiating point. None of these currency mills actually failed, but the rate of exchange on New York was measured by the cost of sending the notes to their several Georgia houses for redemption, which cost was at that time considerable. The Western free banks for the most part went down in the crash of 1857, and again in that of 1861, and their securities being pressed on the market simultaneously sank to low figures, the notes falling even lower than the securities. Whatever may have been the design of the lawmakers (and there is no reason for doubting that it was good), it turned out to be a mere scheme to enable speculators to sell bonds to the public, and continue to draw the interest themselves. It was possible under these laws for a man to borrow, say, \$100,000 of State bonds, deposit them with the auditor, receive from him circulating notes, buy wheat with these notes, send the wheat to New York, and sell it for money with which to buy more bonds to deposit with the auditor; and so round and round. This was actually done in some cases, and it was considered an effective way of procuring an adequate supply of money.

The situation was further disturbed by the fact that counterfeiting of bank notes became popular. The multitude of issues made the practice easy. The West and South, particularly, suffered from the currency troubles. All merchants kept bank note reporters at hand in order to determine the value, if any, of currency presented in the course of trade. Not only were as many as 5,400 counterfeit notes catalogued in one bank note reporter, but also genuine notes were acceptable at varying discounts, depending upon the possibilities and costs of redemption.¹⁴ The situation is epitomized in the following quotation from an early magazine: ¹⁵

In the West the people have suffered for years from the issues of almost every State in the Union, much of which is so irredeemable, so insecure, and so unpopular as to be known by opprobrious names rather than the money it pretends to represent. There the frequently worthless issues of the State of Maine and of other New England States, the shinplasters of Michigan, the wildcats of Georgia, of Canada, and Pennsylvania, the red dogs of Indiana and Nebraska, the miserably engraved notes of North Carolina, Kentucky, Missouri, and Virginia, and the not-to-be-forgotten stumptails of Illinois and Wisconsin are mixed indiscriminately with the par currency of New York and Boston, until no one can wonder that the West has become disgusted with all bank issues and almost unanimously demand that such a currency shall be taxed out of existence, and give place to a uniform national currency.

¹⁴ White, Horace, *Money and Banking*, Boston, Ginn & Co., pp. 405-406.

¹⁵ *Hunt's Merchant's Magazine*, January, 1863, an article entitled "By a Western Banker," quoted by Davis, Andrew M., in *The Origin of the National Banking System*, N. M. C., 1910, p. 14.

Examples of good banking during period. The period was not without its examples of good banking, even in that part of the country noted for wildecating. Both South Carolina and Indiana operated state-owned banks with singular success. Each bank had the right of note issue without any collateral requirement; each operated branches; and each was blessed with sound management. The Bank of the State of South Carolina was founded in 1812 and was finally liquidated in 1870 after many years of useful existence. The State Bank of Indiana was established in 1834 and operated as a state-owned institution for 25 years, when its business was absorbed by a newly organized but privately owned bank of the same name, which operated successfully until 1866, when the tax on state bank note issues caused it to liquidate.¹⁶ There were also privately owned banks which stood out in bold relief against the general mass of low-grade banking of the times. One of these was the State Bank of Ohio, which maintained 36 branches and was a model of excellence.¹⁷

Summary. This short survey of the banking events and developments before the Civil War shows vividly the defective currency and banking facilities of the times. Except in cases where banks voluntarily set up some form of redemption similar to the Suffolk plan, notes circulated at varying discounts and overissue led to failure. A partial palliative was provided in New York by the Safety Fund System, but the widespread adoption of free banking led to complete chaos in many areas. In spite of the chaotic condition among note-issuing banks, some banks maintained sound banking practices, which later furnished the basis for the establishment of an effective commercial banking system.

¹⁶ Davis, Andrew M., *The Origin of the National Banking System*, N.M.C., 1910, pp. 374-386.

¹⁷ *Ibid.*, pp. 386-387.

CHAPTER XIX

THE NATIONAL BANKING SYSTEM

Congressional provisions for a national currency. As early as 1861 it was proposed that United States bonds should be made available to support the issue of a sound and uniform currency. It was hoped that such a scheme would have the double advantage of stimulating the government bond market and of furnishing the country with a currency secured by the obligations of the government. The War made it imperative that the government should be able to obtain necessary funds; at the same time it was important that the disadvantages of an uncertain currency be avoided if possible.¹ Nevertheless, it was not until March 3, 1863, that there was passed "An act to provide a National currency, secured by a Pledge of United States Stocks, and to provide for the Circulation and Redemption thereof."² This act was the legal beginning of the national banking system. That the main interest of Congress in passing this act was centered upon the currency question is evident from the title. The following year (June 3, 1864), a new law was enacted which repealed the previous law and incorporated some changes which appeared, in the light of previous experiences, to be desirable.³ This law, like its predecessor, prescribed in minute detail the requirements pertaining to note issue, but little attention was given to the discount and deposit functions of the national banks.

Provisions of the National Banking Act. The main provisions of the law governing the setting up and operation of national banks should be noted:

1. Provision was made for a Comptroller of the Currency, appointed by the President and operating under the general direction of the Secretary of the Treasury, who was charged with

¹ Davis, Andrew M., *The Origin of the National Banking System*, N.M.C., 1910, pp. 36-37.

² 12 Stat. L., 665.

³ 13 Stat. L., 99.

the duty of executing all laws dealing with the national currency.

2. A method of procedure was laid down for the organization of national banks. Capital requirements, which, incidentally, are the same as those prevailing today, were:

\$50,000 in cities of not over 6,000 inhabitants
\$100,000 in cities from 6,000 to 50,000 inhabitants
\$200,000 in cities over 50,000 inhabitants

The stock was subject to double liability. One-tenth of net profits were to be carried to surplus until it equalled 20 per cent of the capital stock.

3. Before beginning business, at least 50 per cent of the capital subscribed was to be paid in, the remainder to be paid within five months. The bank was also required to deliver to the Treasurer of the United States registered government bonds amounting to not less than \$30,000 and not less than one-third of the bank's capital stock.

4. The bank was entitled to receive from the Comptroller national bank notes equal to not over 90 per cent of par or market value of the bonds deposited, whichever was the smaller, but the total notes issued to any one bank might not exceed the bank's capital stock.

5. Banks might not lend more than 10 per cent of their capital stock to any one borrower (except the discount of bills of exchange and notes owned by the one offering them for discount). They might not lend on their own stock or hold real estate mortgages.

6. The banks were made subject to examination by agents of the Comptroller and required to furnish the Comptroller with statements of their financial condition.

7. Banks were required to carry lawful money reserves against deposit and *circulating note liabilities*. These reserves were to be 15 per cent for all banks outside of certain designated reserve cities. Three-fifths of this amount might be carried as a deposit in banks in the reserve cities for redemption of notes. The reserve city banks, in turn, were required to choose a national bank in New York City as a redemption agent for their notes and might carry one-half of their required 25 per cent reserves on deposit with that bank. The New York banks were required to carry a 25 per cent reserve in cash.

8. Each national bank was required to take the notes of every other national bank at par.

9. National banks were prohibited from becoming indebted for money borrowed to an amount in excess of their capital stock.

10. The national banks were to pay a semiannual tax of $\frac{1}{2}$ of 1 per cent on circulating notes, $\frac{1}{4}$ of 1 per cent on deposits, and $\frac{1}{4}$ of 1 per cent on that part of their capital stock which was not invested in United States bonds.

11. National banks might be designated as depositories of public moneys if satisfactory security was given.

12. In case of failure of a national bank to redeem its notes at its office or redemption agency, the holder might protest them. The Comptroller was then empowered to take possession of the bonds pledged to secure the note circulation and to give notice that the notes might be redeemed at the Treasury. The Treasury might dispose of the bonds, and any deficiency appearing after the redemption of the notes was chargeable as a prior lien against the assets of the bank.

13. The entire circulation was not to exceed \$300,000,000.

14. Provision was made for converting state-chartered banks into national banks.

Reaction to the national banking law. The response of the bankers to the new national banking law was disappointing. Existing state banks found it more profitable to retain their state charters with their note-issuing privileges than to come under the restrictions of national charters. By the end of 1864 there were only 638 national banks, with a circulation of \$67,000,000.* Congress therefore passed an act on March 3, 1865, which, with later amendments, levied a 10 per cent tax upon any bank or individual paying out or using state bank notes.⁵ One of the amendments permitted state banks to be converted into national banks while retaining existing branches. The prohibitory tax on state bank notes, as well as the leniency shown toward branch banks, tended to increase the number of conversions from state to national charters. By the end of 1865 national banks had increased in number to 1,582, with a circulation of \$213,000,000.⁶

An additional problem arose out of the original \$300,000,000 limit on the amount of national bank notes. As conversions of state banks in the East became widespread, it became apparent that no circulation privileges would remain for the West and South, where the existing banking system had generally collapsed, and the organization of new national banks was slow. In 1865, therefore, the law was changed, reducing the amount

* Hepburn, A. B., *A History of Currency in the United States*, 1915, p. 310.

⁵ 13 Stat. L., 469; 14 Stat. L., 146.

⁶ Hepburn, *op. cit.*, p. 311.

of notes which could be issued to larger banks to some fraction of the bank's capital and further providing that one-half of the \$300,000,000 in notes was to be allocated according to the population of the regions in which banks were located.⁷ To relieve the situation further, Congress in 1870 authorized the issuance of \$54,000,000 of additional currency to national banks in areas which had been unable to procure their fair share.⁸ It was not until January 14, 1875, that the limit on the total volume of national bank notes was removed.

The original act required country banks to maintain a redemption agent in the form of an approved national bank in a designated reserve city, while the reserve city banks were to maintain a redemption fund with an approved New York City bank. Required reserves were to be carried against both deposits and notes in circulation. By 1874 it had become apparent that national bank notes had acquired such a reputation for soundness that redemption was seldom required. Further, because each national bank was limited in the volume of notes which it could issue by the amount of its capital and by the bonds deposited with the Treasury, there was little desire on the part of one bank to redeem the issues of other banks. To do so would hardly affect the issue powers of the bank presenting them for redemption. The law was amended on June 20, 1874, to: (1) remove the requirement for carrying reserves against notes; (2) remove the requirement for maintaining redemption facilities in reserve cities and New York City; and (3) require each national bank to maintain a deposit of lawful money with the Treasury equal to 5 per cent of its notes in circulation, from which the Treasury would redeem notes presented. This redemption fund might be counted as part of the required reserves against deposits.⁹ It is interesting to note that in spite of the abolition of required redemption agencies in reserve cities, the privilege of depositing part of the required reserves in the banks of such cities remained.

Further modifications of the law. From time to time the law governing the note issues of national banks was further modified. In 1874 the minimum amount of bonds on deposit to secure circulation was fixed at \$50,000. In 1882 banks with a capital of not over \$150,000 were required to deposit bonds amounting to not over 25 per cent of their capital; the law was also changed to fix the maximum circulation privilege of any one bank at 90

⁷ 13 Stat. L., 498.

⁸ 16 Stat. L., 251.

⁹ 18 Stat. L. pt. 3d, 123.

per cent of its paid-in capital stock.¹⁰ In 1900 the law was again amended to permit banks to issue notes in amounts equal to their capital stock up to the full par value of bonds deposited with the Treasury, instead of 90 per cent, as before.¹¹ This change was intended to make the issuing of notes more profitable at a time when the scarcity and high price of bonds bearing the circulation privilege was causing a reduction in the circulation of notes. Other modifications in the law included the extension of the right of reserve city classification to cities with, first, a population of over 50,000 (1887), and later (1903), of over 25,000, upon petition of three-fourths of local national banks. Also, in 1887, upon petition of three-fourths of the national banks, cities with a population of over 200,000 might be classified as central reserve cities and be eligible to hold deposited reserves of reserve city banks. Chicago and St. Louis qualified under this provision and, together with New York, were known as central reserve cities.

In 1900 a concession was made to small towns by reducing the required minimum capital for banks in towns of not over 3,000 inhabitants to \$25,000, whereas \$50,000 had previously been the minimum. This change was made for the purpose of stimulating the organization of banks under national instead of state charters. State laws quite generally permitted the organization of banks with a capital of \$25,000 and sometimes less. It was not until the passage of the Banking Act of 1933 that the minimum requirement was restored to \$50,000.

National bank notes after 1932. United States bonds issued after our entry into the war in 1917 did not carry the privilege of being pledged with the Treasury as collateral for the issue of national bank notes. This meant that the supply available for such use was limited to older issues which were relatively scarce. During the liquidity crisis of 1932, Congress amended the banking laws to permit national banks, for a period of three years, to issue national bank notes against any United States bonds bearing less than 3 $\frac{3}{8}$ per cent interest. Under the provisions of this act, the issue of national bank notes was expanded by about \$300,000,000, reaching a peak of \$938,000,000 in February, 1934. The privilege expired in 1935, and in anticipation the circulation of national bank notes was reduced again to its earlier volume. However, in July and August, 1935, the Treasury used part of the profit derived from the devaluation of the dollar to retire the bonds which retained the circulation privilege. This action left

¹⁰ 22 Stat. L., 162.

¹¹ 31 Stat. L., 45.

national bank note issues with no bond security.¹² Instead, the issuing banks held only the cash received from the retirement of the bonds. Since that time, national bank notes have gradually declined in quantity. In April, 1941, the amount in circulation was reported as \$153,000,000.

Expanding the powers of national banks. The national banks have from the first been subjected to more rigorous regulations and have been more limited in their powers than the state banks. The state banks were able to make real estate loans, were usually free to carry on investment banking functions, and were frequently permitted to lend more than 10 per cent of their capital stock to one borrower, to own corporate stock, and to organize as trust companies. Further, because of more favorable reserve requirements against demand deposits, they were able to absorb the bulk of the savings deposit business. The national banks attempted to obtain some of the advantages of state charters by organizing state bank affiliates with power to lend on real estate, to engage in trust company business, and to compete for savings bank deposits. This arrangement was available only to the larger banks. The smaller national banks could not afford two separate organizations.

The advantages enjoyed by the state banks are reflected in the figures for the relative number of state banks shown in Table 21.

TABLE 21

RATIO OF STATE-CHARTERED BANKS TO ALL COMMERCIAL BANKS IN UNITED STATES

(By Per Cents)

1876.....	42.6%	1910.....	55.6%
1880.....	39.3	1915.....	56.2
1885.....	45.1	1920.....	57.3
1890.....	49.8	1925.....	59.2
1895.....	53.9	1928.....	60.0
1900.....	53.0	1933.....	64.7
1905.....	55.4	1940.....	64.1

In what appears to have been a vain attempt to overcome the advantage of state charters, the powers of national banks have been gradually increased. To accomplish this, the following changes were instituted:

1. The national banks outside of central reserve cities were given power to make a limited amount of first-mortgage loans on

¹² *Federal Reserve Bulletin*, 1932, p. 535; 1935, p. 202.

improved farm land for a period of not over five years, and on city real estate for not over one year. Later (1927 and 1935) these privileges were expanded.

2. Under the Federal Reserve Act of 1913, national banks can apply to the Board of Governors of the Federal Reserve System for permission to qualify as trust companies.

3. The Federal Reserve Act permits national banks to carry lower required reserves against time deposits than against demand deposits.

4. At various times the limit on the size of individual loans of national banks has been relaxed. In 1906 the limit was made 10 per cent of a bank's capital and surplus instead of the previous rule of 10 per cent of the capital alone. In 1919 and 1927 exceptions were added to bring the law to its present form.

5. The double liability feature of national bank stock was abolished in 1937.

Difficulties Arising Under the National Banking System

The national banking system successfully met the problem of establishing a sound and uniform currency. National bank notes, backed by government bonds and the pledge of redemption by the United States Government, could hardly have been excelled for security. Moreover, the national banks themselves were a very substantial addition to the banking facilities of the country, particularly in the West and South, where banking had been chaotic. They furnished the backbone of the development of a commercial banking system on the discount and deposit basis at a time when deposit banking was becoming a more important function of American banking than note issue.

Seasonal variations in business. Nevertheless, there were some definite weaknesses in the financial and banking structure which the national banking system failed to meet successfully. These weaknesses grew out of the seasonal character of American business activity and the tendency of banks to deposit surplus cash funds with city correspondents who undertook to pay interest and return the funds on demand.

The effects of seasonal variations in business activity on the banking system are very significant. In the United States there are two pronounced seasonal periods of expansion, one in the spring, the other in the fall. The latter is accentuated by the harvesting and marketing of crops. To serve the country competently, the banks should be prepared to make loans and pay out

currency to meet the needs as they arise. For this purpose, unused reserves are required during the slack season.

The movement of excess and legal reserves to the money centers. It is possible that the original redemption system set up for bank notes, with its privilege of carrying part of the legal reserves with the city redemption agents, was partially responsible for the practice of sending excess funds to the money centers. At any rate, it soon became a firmly established habit for banks in the interior to send their unused cash to Chicago and New York. The movement of funds to and from New York is well shown in Table 22, which gives the average monthly currency receipts and shipments of the New York banks for the years 1905 to 1908.

TABLE 22

CASH RECEIPTS AND SHIPMENTS OF NEW YORK BANKS *

(Monthly Averages for the Years 1905 to 1908)

<i>Month</i>	<i>Shipments</i>	<i>Receipts</i>
January	33,079,000	114,354,000
February	32,180,000	47,821,000
March	47,097,000	54,097,000
April	65,212,000	64,972,000
May	35,568,000	68,759,000
June	37,570,000	64,275,000
July	38,969,000	53,795,000
August	69,236,000	36,576,000
September	88,553,000	25,899,000
October	109,547,000	30,422,000
November	87,451,000	31,384,000
December	78,439,000	57,317,000

* Kemmerer, Walter, *Seasonal Variations in the Relative Demand for Money and Capital in the United States*, N. M. C., 1910, pp. 77-79.

It was the New York banks which were most successful in attracting these seasonal deposits, owing largely to the outlet for loanable funds in the New York stock market. The competition for bankers' balances among the so-called "Wall Street Banks" was keen, and the interest rates which they offered were excessive. Before the crisis of 1873, seven of these banks held between 70 and 80 per cent of the bankers' deposits. At the same time their cash reserves were slightly below the legally required 25 per cent.¹⁸ This situation naturally developed out of the competition of these banks and their desire to make profits. Circum-

¹⁸ Sprague, O. M. W., *Crises under the National Banking System*, N. M. C., 1910, pp. 15-24.

stances induced them to expand their loans to the maximum on the basis of country bank deposits whenever borrowers were available. During stock market booms, reserve ratios tended to stay at the minimum allowed by law. It necessarily followed that a reversal of the flow of cash from New York to the interior banks put great pressure upon the New York banks to liquidate their loans. To illustrate this point, in 1872 the loans of the seven banks referred to above were \$80,000,000 in July and \$61,000,000 in October after the autumn withdrawals by country banks had occurred. This was a loan contraction of 24 per cent.¹⁴

The result of loan contraction by New York banks. The effect of this drastic contraction of loans by New York banks may be easily visualized. The loans reduced were mainly call loans to finance speculators on the stock exchange. To pay off their loans, borrowers had to do one of two things. They might and did at times, when the money market was functioning normally, borrow elsewhere to repay the bank which was calling their loans. During the autumn withdrawals, this recourse was not available to any great extent. The only course open, therefore, was to sell securities held on borrowed funds. Only thus could the borrower build up checking account balances in banks, out of which he could discharge his debts. Again, when times were normal and public confidence in the future was high, the borrower had little trouble in paying his debt, since buyers for his stock readily appeared if the price was favorable. In times of excessive speculation, when stock prices were pushed so high as to cause a genuine fear of future values, the speculator-borrower found himself with no market for his securities. The lower prices fell, the more general became the refusal of others to buy stock. There followed an acute panic in security prices, a situation which has often preceded a major depression in business.

The alternatives to loan contraction. But what of the banks at such a time? If loans could not be called because securities could not be sold, the banks found it impossible to reduce their deposit obligations. If their reserve ratios were already at the minimum prescribed by law, they were in the position of having to choose between shipping currency to the interior and allowing reserve ratios to fall below the legal limit, or maintaining their reserve ratios but defaulting on their promise to return country bank funds on demand. The first choice, which was followed in 1873, would have been the more desirable one from the stand-

¹⁴ Sprague, *op. cit.*

point of public policy. At other times the city banks followed the second method, with the result that a bankers' panic and general suspension of cash payments by banks developed. When this happened, the effect upon business was paralyzing. Country banks refused to purchase drafts drawn on commercial houses in the cities because they could not be collected. The movements of trade were therefore hindered. Exchange on New York sold in Chicago at a discount of \$30 per \$1,000 in August, 1893, in the midst of the third crisis of that year. Banks struggled to improve their reserve ratio by reducing loans, which further embarrassed businessmen. Locally, currency sold at a premium in terms of bank deposits.

Because the city banks carrying bankers' balances held almost no excess reserves, they were compelled to choose between a contraction of loans, a reserve ratio below the legal limit, or suspension, whenever there was a decline in such balances held by them. During the crises of 1893 and 1907, particularly, they preferred to suspend cash payments rather than allow their reserves to fall much below 25 per cent. Critics of the system have been inclined to place a large part of the blame for the difficulties upon the rigid reserve requirements. The law, as it stood, did not forbid banks to allow reserves to fall below the legal limit. It merely forbade the making of new loans and the paying of dividends while banks were in that condition. True, this was somewhat awkward for the banks, but it was not sufficient cause for suspension. It was the attitude of the banks toward the reserve limit rather than the reserve limit itself that was at fault. Either the New York banks, open to largely predictable seasonal pressure from country bank withdrawals, should have willingly utilized their reserves in time of need, or they should have maintained reserves above the 25 per cent limit for such emergencies as were certain to arise.

The need for elasticity. The banking and currency situation proved, therefore, a most trying one. As the banking system actually operated, it failed miserably to give the country a smooth-functioning banking service in keeping with its needs. As we observed earlier in this discussion, the trouble arose out of the inability of the system to adapt itself to the seasonal needs of business. It should be noticed that the ebb and flow of funds from the country areas into the city banks was not only a seasonal occurrence but a cyclical one as well. In slack years, country bank balances crowded the central money markets; while during prosperity, the tendency was toward a reversal of the

process. This, in itself, was not so important a factor in causing difficulties as were the seasonal movements. When harvesting and grain-moving time came, the agricultural banks required currency to meet the needs for money in hand-to-hand circulation. The autumn rise in general business also added to the currency requirements. Banks needed their cash both for payment into circulation and as a reserve basis for new loans. Stating the situation in a somewhat different way, the banking system needed seasonal elasticity of some sort to enable it, without strain, to make new loans and pay out cash when seasonal needs arose. In practice, a seasonal expansion in the demand for loans and currency in the interior required a sharp curtailment of loans on the stock market at least; at its worst, it precipitated a general collapse.

How Can a Banking System Be Made Elastic?

This raises the vital question of how a banking system can achieve the required elasticity. So far as mere currency requirements are concerned, the ability of banks to shift their demand deposit liabilities into note liability form would meet the situation. Then loans and deposits on existing cash reserves need not be reduced. For this reason the critics of the national banking system placed a large part of the blame for the trouble upon the national bank notes. They were, it was alleged, inelastic in nature because they were secured by government bonds.

Why national bank notes were inelastic. There are several reasons why national bank notes were not responsive to the needs for currency. First, since they were issued against government bonds, the maximum volume of notes was limited by the amount of government debt bearing the circulation privilege. This, in itself, however, was not the real difficulty.

Second, the available bonds often sold at a high premium. In 1888 the premium was 30 per cent, while notes could be issued to only 90 per cent of par. Thus, it was necessary to invest \$130 in 4 per cent bonds to gain the privilege of issuing \$90 in notes. The loss arising from the necessity for writing off the premium during the remaining life of the bonds, and the further loss of interest on the \$40 extra investment in bonds yielding 4 per cent, which might have been earning the higher local loan rate, caused banks to issue notes only against the bonds which the law required them to own. The note circulation declined from \$341,000,000 in 1874, when national banking capital was \$490,000,000, to \$126,000,000 in 1890, when national banking capital was \$618,-

000,000. Again, this had no real bearing upon the question of seasonal elasticity.

Third, it was impossible for a bank to meet its currency needs by the purchase of bonds with the circulation privilege. The premium at which they sold meant that a bank would perhaps lose more cash than it received in the form of notes. Moreover, a considerable delay was involved in the process. Obviously, then, a bank could make a seasonal increase in its currency only on the basis of bonds already owned or upon borrowed bonds. The latter were used to a limited extent.

Fourth, since seasonal elasticity could be obtained only by issuing notes against bonds already in possession of the bank, it would have been necessary in the off seasons to retire notes from circulation while retaining the bonds. Here we have the real cause of the inelasticity of national bank notes. No self-respecting banker would care to retire his notes and hold the low-yield United States bonds. In fact, his notes were in general circulation and seldom reappeared at his bank, and hence could hardly be retired. The only alternative remaining to accomplish a reduction of currency was the sending in of legal tender currency to the Treasury. This, of course, would be unprofitable if interest could be obtained from city correspondents for the deposit of such currency. Whenever a banker's supply of cash exceeded the existing local needs, he promptly sent it to his city correspondent, who in turn utilized it as a basis for credit expansion in the city markets. Under the circumstances, regardless of the type of note issue that might have been permitted, short of one with no fixed top limit, bankers issued all the notes allowed and sent in surplus lawful money to the money centers in slack times. Consequently, they found themselves unable to issue more notes during the busy season. This was certain to be the result unless a bank's note-issuing powers were not completely exhausted before bank notes had satisfied the local currency needs. Then further note issue would have become superfluous.

The real source of elasticity of credit and currency. The real secret of the inelasticity of loans and currency of the national banking system lay in the unwillingness of banks to refrain from utilizing their funds in the speculative markets. The source of elasticity in a banking system, as is so ably pointed out by L. W. Mints,¹⁵ is in the maintenance by banks in slack times of unused

¹⁵ "The Elasticity of Bank Notes," *Journal of Political Economy*, August, 1930, Vol. 38.

reserves in an amount sufficient to care for later needs. Because of their desire for competitive profit, the New York City banks which carried the lion's share of the bankers' balances failed to carry a sufficient margin of unused reserves to enable them to meet the interior's changing demands for currency. In other words, they did not perform the duty which their position imposed upon them.

Treasury aid to banks. In times of money stringency, the banks clamored for aid from the Treasury. It was true, of course, that the Treasury normally held substantial amounts of currency which might have been of some help to the banks if it had been transferred to them. During the panic of 1873, the Treasury placed about \$13,000,000 in the money market by purchasing bonds for sinking fund retirement.¹⁶ During the troubles of 1890, the Treasury disbursed nearly \$70,000,000 in the redemption of bonds.¹⁷ In 1893 similar action was taken. In 1907 the Treasury aided banks by depositing with them \$36,000,000 between October 19 and October 31,¹⁸ while it more or less regularly expanded its deposits with the "pet banks" each autumn as crop-moving time arrived.¹⁹

Clearing house loan certificates. The banks themselves utilized clearing house loan certificates as a means of preserving a semblance of normal operations in the face of restrictions on currency payments. These loan certificates were issued by the clearing house committee to member banks with debtor clearing house balances which could not be met in cash without impairment of reserves. The certificates, bearing interest and properly secured by the deposit of collateral by the debtor bank, were acceptable among the local banks in settlement of clearing house balances.

The use of loan certificates was frequently coupled with a refusal by banks to cash checks unless presented by a depositor willing to take credit on his own deposit account, or by a clearing house bank which would take payment in such loan certificates, so that settlement could be made without any loss of cash. Under this arrangement, banks were able to withstand withdrawals arising from purely local runs or local business transactions. They might, in some instances, even expand loans to borrowers who had to meet local commitments.

¹⁶ Sprague, *op. cit.*, pp. 40-41.

¹⁷ *Ibid.*, p. 139.

¹⁸ *Ibid.*, p. 263.

¹⁹ Willis, H. Parker, *The Federal Reserve System*, New York, Ronald Press Co., 1923, p. 30.

Although the clearing house loan certificates permitted the functioning of local deposit currency, they did little to care for the needs for actual currency. For instance, their use would not enable New York banks to pay out currency to their country correspondents. Neither would it facilitate the meeting of local currency demands. Certified checks and cashier's checks were sometimes used to supplement the use of ordinary checks. In 1873 eight cities resorted to the use of clearing house loan certificates; in 1884 New York alone issued them; in 1893 they were issued in eight cities; and in 1907 they were issued in 42 cities.²⁰

Clearing house checks. To meet the need for actual hand-to-hand currency, clearing house associations issued loan certificates (or their equivalent) in small denominations, engraved to resemble currency. These were acceptable by the banks for deposit and, of course, were redeemable in legal money when suspension was over. In 1907 about \$35,000,000 of this illegal emergency currency was issued.²¹

The natural elasticity of a banking system. In any banking system a source of elasticity arises from the fact that the demands against banks in the same and in different areas tend to dovetail. While some banks are under pressure to expand their loans and pay out currency, others are not. It follows, therefore, that any system which permits the tapping of the unused reserves of some banks for the use of others adds to the elasticity of the whole system. A comprehensive system of branch banking would achieve this result. Under the unit national banking system, this dovetailing of demands against banks could be accomplished in only three basic ways:

1. The larger borrowers were able to shift from one bank to another and obtain funds from those having excess reserves by utilizing the commercial paper market.

2. The banks themselves possessed a fair-weather system of pooling reserves through their deposit of surplus funds in the money centers. Except for the wider seasonal swings, the shifting funds of individual banks made a sustained fund on which the central money markets drew. In addition, individual banks were able to borrow from their city correspondents to meet their particular needs.

3. The banks might have a recognized procedure of rediscount whereby needy banks might acquire the surplus reserves of

²⁰ Sprague, *op. cit.*, pp. 45, 62, 112, 142, 145, 180, 289.

²¹ *Ibid.*, p. 452.

others. This expedient was tried in New York in 1873, when the clearing house banks not only issued loan certificates but instituted a system for equalization of reserves among the various banks. Thus, banks with reserves depleted by currency withdrawals were able to borrow surplus reserves of other banks. Unfortunately, this was not used during other crises.²²

Throughout the history of the old national banking system, banks were reluctant to become indebted for money borrowed or for rediscounts. This may have been partially due to the legal limit of 100 per cent of a bank's capital on such indebtedness. The insignificance of such methods of mobilizing reserves may be seen from the fact that during the crisis of 1893 rediscounts and bills payable rose to only 3 per cent of loans and discounts of the banks. In 1907 they were 2.2 per cent, while in the normally prosperous year of 1905 they were only .7 per cent.

Emergency currency under the Aldrich-Vreeland Act of 1908. The acute banking crisis of 1907 resulted in the passage of an emergency currency law which provided for the voluntary organization of incorporated national currency associations. Not more than one might be organized in each city, and at least ten national banks, having an aggregate capital and surplus of \$5,000,000, were required. Provided a member of such an association had already outstanding national bank notes equal to 40 per cent of its capital, it might deposit securities and commercial paper with the association in trust for the United States. The association might then apply to the Comptroller for additional circulating notes to an amount not exceeding 75 per cent of the cash value of the paper and securities pledged, unless the securities pledged were state or municipal bonds, in which case the limit was 90 per cent of the market value. The liability of the participating banks to each other was in proportion to their capital and surplus. The government had an unlimited prior claim against all the assets of each bank to protect it against loss through redemption of the notes. Individual banks which were not members of national currency associations were permitted to pledge approved state and municipal securities and receive emergency currency in amounts not in excess of par or 90 per cent of the market value.

The total amount of such emergency currency was not to exceed \$500,000,000. To assure its retirement, a tax was levied against the notes, varying from an annual rate of 5 per cent for

²² *Ibid.*, p. 46.

the first month up to 10 per cent for the sixth and subsequent months. No occasion arose for the use of the privileges of this act before it expired June 30, 1914. In the meantime, however, the Federal Reserve Act had been passed. Since the reserve banks could not be put into operation before the expiration of the old emergency currency law, Congress incorporated into the Federal Reserve Act a one-year extension of the old act, with modifications to include state member banks under its privileges and with other minor changes, including a lowered tax rate.

The outbreak of war in Europe put great pressure upon the American banking system, and the banks quickly availed themselves of the privilege of obtaining emergency currency. Forty-five national currency associations were organized, with 2,197 members, which were authorized to issue \$386,444,215 in new currency.

Need for a central bank. All of the devices and practices just described failed to go to the root of the problem. They offered only a partial escape from the evils of inelasticity. The only effective cure lay in the maintenance of adequate unused reserves upon which the banking system might draw to meet both seasonal and emergency needs. This called for some form of central bank.

One vital distinction between central banks and other banks lies in the fact that custom, tradition, or law sets sufficient curbs upon the profit-seeking motive to insure that central bank affairs are administered with an eye to proper public policy. Central banks normally provide other banks with reserves, either in the form of deposits with the central bank or in the form of notes. So long as the central bank itself carries sufficient reserves to enable it to make new loans, either in the general market or directly to other banks, it can, by so doing, expand the reserves of other banks almost at will. This is, of course, the reason why the profit motive of a central bank must be restrained, since otherwise it would be likely to behave in the same manner as the Wall Street banks.

CHAPTER XX

THE FEDERAL RESERVE SYSTEM

The birth of the Federal Reserve Act. The Aldrich-Vreeland Act of 1908 created a National Monetary Commission, which carried on an extensive investigation into banking history as well as current banking practices. The results of its studies, made by trained economists, have been published and furnish a voluminous source of historical information on banking experiences before 1910. In addition, the Commission prepared and recommended a banking reform measure known as the Aldrich Bill, which provided for the formation of a National Reserve Association to be capitalized at not less than \$100,000,000. It was to have its head office in Washington, to comprise 15 branches, and to be owned by the member banks. The central bank would have power to rediscount paper for its members, hold deposited reserves without interest, and deal in the open market in United States bonds. It might issue asset currency, provided a 50 per cent cash reserve was maintained.¹ The bill was introduced in 1912 but was not passed. It became a controversial question in the presidential election of that year, with the Democratic platform flatly opposing the establishment of a central bank but advocating a systematic revision of the banking laws to provide temporary relief and protection from the "Money Trust."² The Democratic victory of that year meant the end of the Aldrich Bill. In its place was passed the Federal Reserve Act of 1913. Instead of one central bank with branches, it provided for the setting up of a regional system of not less than eight nor more than twelve reserve banks. Thus the fear that the new system would be dominated by the Money Trust was allayed. Over the whole system was the Federal Reserve Board, which had general

¹ Willis, H. Parker, *The Federal Reserve System*, New York, The Ronald Press Company, pp. 81-82.

² *Ibid.*, p. 103.

supervisory powers. Actually twelve districts were established, with a Federal reserve bank in each.

The Federal Reserve Banks

The following statement of the Federal Reserve Bank of New York will form our point of departure in the study of the reserve banks.

CONDITION OF FEDERAL RESERVE BANK OF NEW YORK, JUNE 25, 1941

<i>Assets</i>		<i>Liabilities</i>	
Total cash reserves.....	\$8,863,939,000	Capital stock paid in... \$	51,584,000
Bills discounted	963,000	Surplus	63,517,000
Industrial advances	1,536,000	Other capital accounts..	13,336,000
U. S. Government securities	623,475,000	Notes in circulation.....	1,772,030,000
Uncollected items	217,336,000	<i>Deposits:</i>	
Bank premises	9,949,000	Member bank reserves..	\$6,364,978,000
Other assets	13,777,000	U. S.	260,379,000
		Foreign bank	474,195,000
		Other deposits	536,042,000
		Total deposits	\$7,635,594,000
		Deferred availability items	193,028,000
		Other liabilities	1,886,000
Total assets	\$9,730,975,000	Total liabilities	\$9,730,975,000

The cash assets of the reserve banks come from three main sources: the contributions of member banks through stock subscriptions, deposits of cash, and the issue of Federal reserve notes in exchange for cash.

Capital of the Federal reserve banks. The Federal Reserve Act provided that no reserve bank might be established with a subscribed capital of less than \$4,000,000. Every national bank is required, on penalty of forfeiture of its charter, to belong to the system, and any eligible state bank or trust company may join. Each member must subscribe to an amount of capital stock in the reserve bank of its district equal to 6 per cent of its own paid-up capital and surplus. If its capital and surplus are increased or decreased, its subscription to reserve bank stock is correspondingly modified. The Act further provided that in the event that insufficient capital was subscribed by member banks, stock in the reserve banks might be offered for sale to the general public. If the capital were still insufficient, stock might be sold to the United States Government. Only stock held by members

FEDERAL RESERVE DISTRICTS

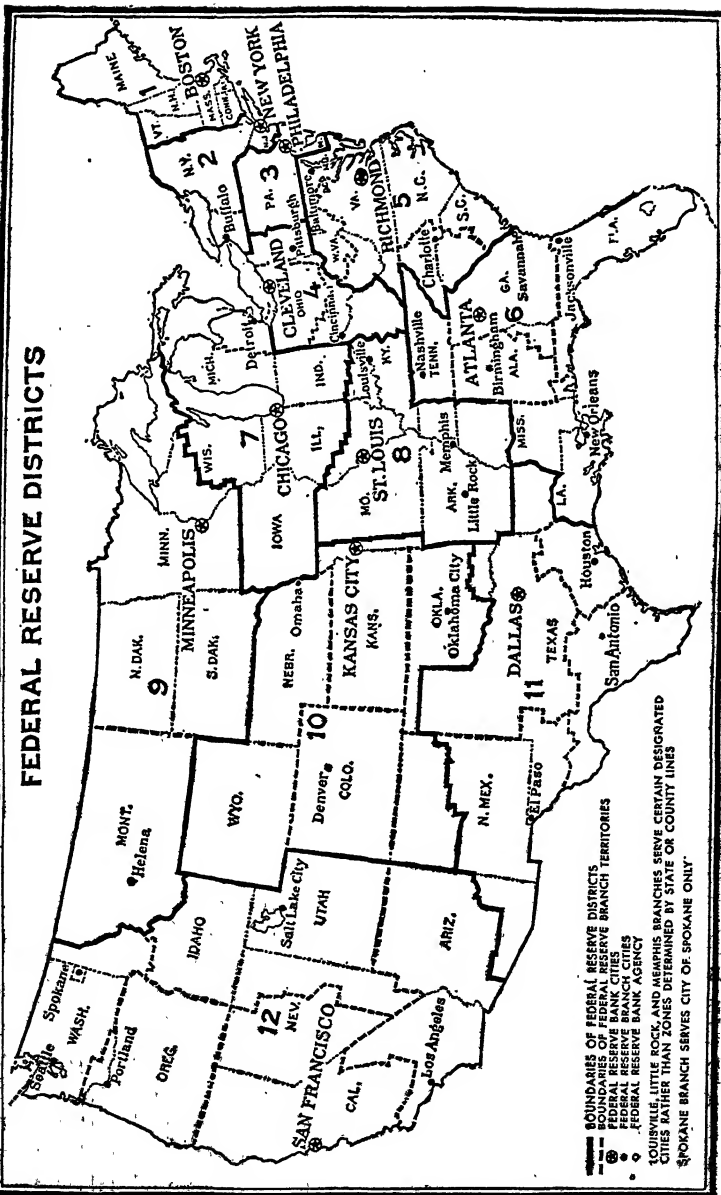


CHART 8.

in gold certificates against both deposits and Federal reserve notes.

Although the Board of Governors may suspend reserve requirements, the reserve banks have not relied on this to provide elasticity. Since they need not be concerned about earnings, the Federal reserve banks followed the policy of carrying reserves against their own liabilities much in excess of the 35 per cent against deposits and 40 per cent against note issues required by law. The existence of excess reserves in the reserve banks may be

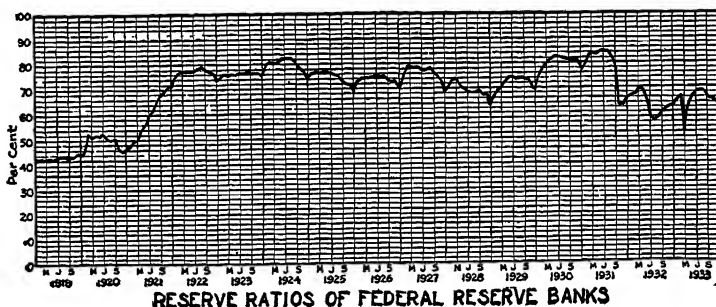


CHART 9.

seen in Table 23 and Chart 9 on this page, showing the monthly averages of daily reserves for all reserve banks, expressed in percentages. Although sometimes concealed by gold imports and cyclical influences, the effect of seasonal variations upon the reserve ratios of the Federal reserve banks is distinctly noticeable. The autumn months', the Christmas, and the year-end demands are regularly visible.

TABLE 23

RESERVE RATIOS OF FEDERAL RESERVE BANKS

	1919	1920	1921	1922	1923	1924	1925	1926
Jan.	52.0	44.9	47.5	74.7	75.0	79.2	76.2	72.5
Feb.	43.3	52.5	49.6	76.9	76.1	81.2	77.0	74.1
March	42.7	51.6	50.2	77.6	75.7	80.5	76.4	74.3
April	43.0	52.0	53.8	77.6	76.0	80.5	76.6	74.7
May	42.4	51.8	56.4	77.6	75.9	82.7	76.8	74.9
June	43.3	52.6	59.1	77.8	76.7	82.5	76.3	75.4
July	43.7	50.4	61.7	78.2	76.4	82.6	76.1	74.7
August	43.7	50.0	65.2	79.7	77.6	82.4	75.5	75.0
Sept.	43.3	50.4	67.4	78.0	76.4	80.1	73.8	73.6
Oct.	43.7	46.8	69.4	76.7	76.1	78.5	72.0	72.8
Nov.	44.7	45.7	71.7	76.1	76.3	77.1	71.6	73.0
Dec. ....	...	...	71.8	73.5	75.6	73.8	68.5	70.0

TABLE 23 (Cont.)

	1927	1928	1929	1930	1931	1932	1933
Jan.	75.6	71.2	66.8	74.4	79.0	66.5	64.3
Feb.	79.0	74.0	69.4	78.3	83.4	67.4	66.1
March	79.1	73.5	70.3	80.3	84.0	69.7	51.3
April	78.7	71.2	72.7	81.0	83.5	69.3	61.0
May	78.7	69.5	74.4	82.6	84.4	64.8	66.7
June	77.8	68.0	74.5	82.4	84.3	58.4	68.3
July	77.9	68.0	73.8	82.0	84.3	56.3	68.3
August	78.4	68.0	74.2	81.7	81.4	58.2	68.1
Sept.	76.5	69.0	73.5	81.4	77.5	60.0	66.7
Oct.	75.1	67.6	73.2	81.5	62.6	61.5	65.6
Nov.	72.4	67.7	70.2	81.3	63.1	62.4	64.9
Dec.	68.4	63.6	69.3	76.2	65.2	62.5	63.9

During the years 1919 and 1920 the average reserve ratios of the reserve banks hovered close to the minimum limits set by the law, while reserves of individual banks were frequently impaired. In order to correct this impairment, the reserve banks, under the direction of the Federal Reserve Board, rediscounted and purchased paper from each other, thus effecting an equalization of reserves. In 1919 such rediscounts and purchases of paper amounted to \$2,658,254,000; in 1920 they were \$3,672,792,000; and in 1921, \$999,153,000. In addition, the purchasing and selling of acceptances and United States securities were carried on between banks.

In spite of rediscounting operations between reserve banks, eight banks showed some small deficiency in reserves during the year 1920 and were taxed on the deficiency to the amount of \$24,-664.05.⁸ The scant margin of excess reserves of 1919 and 1920 was the result of the credit expansion involved in postwar government financing and the boom of 1919 to 1920. It is worthy of notice that, in spite of the pressure of the boom and the subsequent crisis, the reserve banks were able to supply the country with necessary currency.

Contact of the Federal Reserve Banks with the Money Market

The Federal reserve banks have two important and one unimportant contact with the money market. The important contacts are: (1) rediscounting and lending to banks which are eligible to apply to the reserve banks for accommodation; and (2) purchasing and selling various kinds of paper in the open market. The unimportant contact referred to is the power of reserve banks to lend directly to individuals under certain re-

⁸ *Annual Report of the Federal Reserve Board, 1920, p. 46.*

stricted circumstances. Each of these three modes of getting reserve bank funds into the market will be examined in turn.

Direct advances to banks. All banks belonging to the Federal Reserve System are entitled to look to their reserve banks for accommodation in time of need. They may offer eligible paper for rediscount, or they may offer their own promissory notes secured by eligible paper or United States bonds.⁴ We need not concern ourselves here with the technicalities of eligibility and the rediscounting process. That is reserved for later study. We are interested, however, in the effect of the rediscounting process upon the reserve bank and the member bank involved.

First, as to the member bank, the rediscounting of eligible paper is a sale of promissory notes and bills of exchange by the member bank to the reserve bank. The discount of the member's own collateral note by the reserve bank is a loan. Since rediscounting or borrowing is made necessary by a depletion of the member's reserves, the payment of the proceeds to the member bank is normally made by adding the amount to the member's reserve account and notifying the member. If the member is in need of currency, the reserve bank may ship currency instead of giving credit on the member's reserve account. In any event, the member bank's statement would be affected thus:

Assets:

1. Cash or reserve account increased by the face amount of rediscounted paper (or collateral note) less the discount.

Liabilities:

1. Bills payable and rediscounts increased by full face amount of rediscounted paper or collateral note.
2. Undivided profits (or unearned discounts) reduced by the amount of the discount.

It will be noted that no change is recorded in the loans and discounts of the bank engaging in rediscounting, but liabilities are increased instead. This is desirable because rediscounted paper must be indorsed by the member bank and hence acquires the same characteristics, for all practical purposes, as the member's own note.

The effect on the reserve bank which has rediscounted or lent to the member bank is similar to the effect of a lending operation

⁴ On September 1, 1939, the Board of Governors of the Federal Reserve System announced that in view of current developments in the international situation, the Federal reserve banks will make advances to member and *nonmember* banks on Government obligations at par at rates prevailing for member banks.

by any bank. Three changes will probably appear: (1) its assets will be increased by the amount of "bills discounted"; (2) its liabilities will show an increase in deposits of members or Federal reserve notes in circulation; and (3) additions will be made to undivided profits or unearned discounts. As the volume of advances to member banks increases, the liabilities of the reserve bank correspondingly increase and the ratio of cash reserves to liabilities falls.

Open market operations. Section 14 of the Federal Reserve Act permits the reserve banks to buy and sell in the open market: (1) bills of exchange eligible for rediscount; (2) obligations of the United States, including bonds of not more than six months' maturity of the Home Owners' Loan Corporation and the Federal Farm Mortgage Corporation (which are guaranteed as to principal and interest by the United States); (3) obligations of political subdivisions of the United States having a maturity of not over six months and issued in anticipation of revenue; and (4) acceptances of Federal intermediate credit banks and national agricultural credit corporations. It is important to understand clearly the effect of such transactions upon both the member banks and the reserve banks.

Let us assume that a reserve bank purchases \$1,000,000 worth of government obligations in the bond market and trace the effects of such a transaction. If the sellers are member banks disposing of part of their holdings of bonds, the transaction is quite simple. The reserve bank will tender drafts against itself in payment. The member banks will present the drafts for payment and receive credit on their reserve accounts. If the sellers are nonmember banks, they will likewise receive drafts against the reserve bank in payment and deposit them for credit with city correspondents which are member banks. The nonmember banks' reserves will be increased by the amount of the drafts, and the member banks receiving them for collection will again receive the proceeds in credit on their reserve accounts. If the sellers are individuals, their actions will be similar to those of nonmember banks. Eventually member banks will receive the drafts for collection and obtain credit for the proceeds on their reserve accounts. Thus, we see that the reserve accounts of member banks may be increased at any time by the purchase of obligations in the open market.

A sale of securities in the open market has just the reverse effect. Let us suppose that the reserve banks sell securities to buyers in the open market, who tender checks on member banks in payment. These checks will be collected by the reserve

bank to which they are issued by a deduction from the member's reserve account. It makes no difference whether the purchaser is an individual, a nonmember, or a member bank. In the end, settlement is made by deduction from the reserve accounts of member banks.

It is easy to see the importance of the open market transactions of the reserve banks. By the purchase of securities, the reserve banks can take the initiative in increasing member bank reserves. Further, so long as they have securities which may be sold, the reserve banks may reduce the reserve accounts of members. The full significance of this fact must await later discussion of Federal reserve policy.

PRINCIPAL ASSETS AND LIABILITIES OF ALL FEDERAL
RESERVE BANKS, JUNE 25, 1941
(In Thousands of Dollars)

<i>Assets</i>		<i>Liabilities</i>	
Gold certificates on hand and due from U. S. Treasury	\$20,313,730	F. R. notes in actual circulation	\$6,633,192
Redemption fund—F. R. notes	9,508	Deposits:	
Other cash	285,141	Member bank—reserve account	12,985,110
Total reserves	20,608,379	U. S. Treasurer—general account	1,081,125
Bills discounted:		Foreign bank	1,240,276
For member banks...	2,013	Other deposits	650,690
For nonmember banks, etc. ....	.....	Total deposits	<u>15,957,201</u>
Total bills discounted	2,013		
Bills bought:		Ratio of total reserves to deposit and F. R. note liabilities combined (per cent)	91.2
Payable in dollars			
Payable in foreign currencies			
Total bills bought....			
Industrial advances	9,088		
U. S. Government securities:			
Bonds	1,363,800		
Treasury notes	820,300		
Treasury bills .....	.....	
Total government securities	2,184,100		
Other reserve bank credit	54,209		
Total reserve bank credit outstanding..	2,242,410		

Direct loans to individuals. Because of the general belief that banks had persistently refused to make loans on good security to solvent businessmen, provision has been made for a limited amount of direct advances by the reserve banks. The details of terms under which such loans can be made will be considered later. It is sufficient here to observe that advances made directly to individuals by the reserve banks have the effect of increasing member bank reserves during the life of the loans, since the proceeds of such loans will be deposited in a bank.

Rediscounting

In the preceding section we have considered the general effect of rediscount operations upon banks. It is necessary now to examine the details of the rediscounting process.

Who may rediscount. One of the privileges of membership in the Federal Reserve System is the right of a bank to replenish its reserves by rediscounting and borrowing at the reserve bank. Ordinarily nonmember banks are denied this privilege, although they were allowed to receive the benefits of rediscounting during the First World War, when member banks were permitted to rediscount eligible paper received from nonmembers under a special ruling of the Federal Reserve Board. Moreover, they were granted an emergency privilege of obtaining advances directly from the reserve banks for a maximum period of one year from March 24, 1933. Federal intermediate credit banks, under regulations prescribed by the Board of Governors, may rediscount eligible agricultural paper with the reserve banks, provided such paper does not bear the indorsement of a nonmember bank eligible for membership.

Application for rediscount. Each application for the rediscount of paper must be accompanied by a formal certificate in which the member states its belief that the paper is eligible, that it has not been acquired from a nonmember bank, and, in case of state banks, that the borrower whose paper is offered is not and will not be allowed to become indebted to the bank in excess of an amount which such state bank might lend if it were a national bank.

When a member bank has made application for the rediscount of paper, the responsibility rests upon the reserve bank to determine whether or not the paper is actually eligible under the law and the regulations of the Board. The regulation laid down by the Board covering the matter reads:⁵

⁵ *Regulation A* (effective October 1, 1937), from Sections 1(h) and 3(a), (b).

Every application by a member bank for the discount of paper or for an advance to such bank must contain a certificate . . . that the paper offered for discount or the security offered for the advance, as the case may be, has not been acquired from a nonmember bank (otherwise than in accordance with section 4 of this regulation) or if so acquired, that the applying member bank has received permission from the Board of Governors of the Federal Reserve System. Every such application shall also contain a notation by the member bank as to whether it has on file a statement which adequately reflects the financial worth of a party primarily liable on the paper offered as security for an advance or for discount or of the person from whom the member bank acquired such paper if such person is legally liable thereon.

A Federal reserve bank shall take such steps as may be necessary to satisfy itself as to the eligibility of any paper offered for rediscount. [This] may be evidenced by a statement which . . . [shows] a reasonable excess of quick assets over current liabilities. . . .

Any Federal reserve bank may require that there be filed with it statements, or certified copies thereof, which adequately reflect the financial worth (1) of one or more parties to any note, draft, or bill of exchange offered for discount or to any obligation offered as security for an advance and (2) of any corporation or firms affiliated with or subsidiary to such party or parties. A Federal reserve bank may in any case require such other information as it deems necessary.

Since the Federal reserve banks "may" discount eligible paper, each bank is authorized to determine not only the eligibility of paper offered for rediscount but also its acceptability. Section 4 of the Federal Reserve Act requires the board of directors of each reserve bank to administer its affairs "fairly and impartially and without discrimination in favor of or against any member bank or banks and may, subject to the provisions of law and the orders of the Board of Governors of the Federal Reserve System, extend to each member bank such discounts, advancements, and accommodations as may be safely and reasonably made with due regard for the claims and demands of other member banks, the maintenance of sound credit conditions, and the accommodation of commerce, industry and agriculture."

The determination of the acceptability of eligible paper offered for discount by member banks must therefore be made on the basis of:

1. The soundness of the paper itself, which reflects to some extent the value of the member bank's indorsement.
2. The desirability of extending more credit to this particular bank—that is, whether it is using more than its fair share of rediscount facilities.
3. The general business conditions and the probable effect of advances to this bank on general credit conditions. A bank

PLEASE READ CAREFULLY THE REVERSE SIDE OF THIS FORM

APPLICATION FOR REDISCOUNT

To the FEDERAL RESERVE BANK OF CHICAGO

Date...

The..... Bank of.....
 application for the rediscount of the notes, drafts, or bills of exchange listed below aggregating \$.....
 You are authorized to charge to our account at maturity, all paper rediscounted by us, and to charge it
 hereafter, any paper which you may determine ineligible or deem undesirable for any reason. if account at any time

THE PROCEEDS OF THIS APPLICATION ARE REQUIRED FOR

1. Deposit D
2. Loan Den
3. Retiring

The liability of this bank as of this date, for borrowed money, exclusive of this offering, is as follows:

Rediscounts
 Bills payable
 Certificates of deposit issued for money borrowed
 Total
 Paper sold without recourse
 Total deposits as of this date
 Total loans and discounts as of this date

I certify that the notes, drafts and bills of exchange listed in the foregoing schedule are notes, drafts or bills of exchange which have been issued or drawn, or the proceeds of which have been used, or are to be used in the first instance, in producing, purchasing, carrying or marketing goods (the word "goods" as here used includes goods, wares, merchandise, or agricultural products, including live stock) in one or more of the steps of the process of production, manufacture or distribution, or for the purpose of carrying or trading in bonds or notes of the United States. I further certify that none of the notes, drafts, or bills of exchange listed above were acquired from nonmember banks except those which are so designated above, and that this bank has received permission from the Federal Reserve Board to discount with the Federal Reserve Bank this paper acquired from nonmember banks.

I further certify that the above list includes no notes, drafts or bills of exchange of any one borrower who is liable for borrowed money to this bank in an amount greater than ten per centum of the unpaired capital and surplus of this bank (except loans made under amended Section 3200 U.S.R.S.), or who will be permitted to become liable in excess of this amount while such notes or bills of exchange are under discount with the Federal Reserve Bank, unless in accordance with Section 3200 U.S.R.S.

(Official Signature) ..

thought to be unduly supporting a speculative movement might be refused accommodation.

Eligible paper. "Eligible paper" may be used as a source of funds through either rediscount or pledge as security for the member bank's own note. Although each reserve bank has the responsibility of determining whether or not paper tendered for rediscount is actually eligible, the basis for that determination is laid down in the law and in the regulations and rulings of the Board of Governors.

The eligibility of paper for rediscount is to be judged by two standards. First is the question of maturity. Only short-term paper is eligible. Commercial paper, when offered for rediscount, may not be over three months from maturity. Since farmers normally require seasonal loans of longer duration, agricultural paper is eligible for rediscount if its maturity date is not more than nine months distant. The second test of eligibility is the purpose which gives rise to the paper. Paper issued to finance the production, purchase, storage, or marketing of goods is eligible. Thus, obligations of businessmen in the form of notes, drafts, and bills of exchange to obtain working capital are eligible. The same is true of paper issued to carry or trade in obligations of the United States Government. On the other hand, the paper is ineligible for rediscount if the borrowers use their funds to speculate or trade in securities (other than those of the United States) or to speculate in commodities. Likewise, paper of borrowers purchasing fixed assets is ineligible. The notes of speculators on the grain or securities markets, and of farmers using the borrowed funds to pay for land or barns are ineligible for rediscount.⁶

⁶The Federal Reserve Act lays down the following specific rules governing eligibility:

1. Eligible paper consists of notes, drafts, and bills of exchange issued or drawn for agricultural, industrial, or commercial purposes, or the proceeds of which have been or are to be used for such purposes. The Board is authorized to interpret the application of this rule.

2. Obligations of factors used to make advances to producers of raw agricultural staples are eligible as commercial paper.

3. Paper issued to carry or trade in United States obligations is eligible.

4. Paper issued to carry or trade in securities other than United States obligations is not eligible.

5. Eligible paper must have a definite maturity at the time of discount of not more than ninety days, except that: (a) if drawn or issued for an agricultural purpose, it may have a maturity at the time of discount of not more than nine months; (b) if a banker's acceptance, drawn for agricultural purposes, and secured by documents of title to readily marketable staples, it may have a maturity of not over six months; and (c) sight drafts arising out of domestic shipment or export of nonperishable, readily marketable staples and secured by shipping documents of title may be discounted by the reserve bank for the estimated life of the bill but may not be held more than ninety days.

6. No paper is eligible for rediscount in the hands of a member state bank or trust company if the borrower is indebted to such bank by an amount that would be illegal if such bank were a national bank.

7. Paper of producer-coöperative marketing associations is to be classed as agricultural paper and hence is eligible with maturities up to nine months, if it is used for: (a) loans to members; (b) making payments to members for products delivered; or (c) meeting expenses of grading, processing, packing, or marketing agricultural products.

8. Notes representing loans to finance construction of residential or farm buildings are eligible as commercial paper if accompanied by a binding agreement by a

In spite of very elaborate regulations for determining eligibility, many questions have arisen regarding their application to specific situations and have been submitted to the Federal Reserve Board for an answer. It is unnecessary here to review in detail the rulings made by the Board. It has been stated, however, that the classification of paper may be determined in two ways. (1) If it is issued for or drawn for a commercial or agricultural purpose, its classification is determined by that fact. For example, drafts drawn on buyers by sellers and notes of buyers given to sellers would arise out of a commercial (or agri-

person acceptable to the reserve bank to advance the full amount of the loan upon completion of the building. (Act of June 27, 1934.)

The Federal Reserve Board, in Regulation A, has made the following definitions of the nature of eligible and ineligible paper under the law:

1. Eligible paper must bear the indorsement of a member bank when offered for rediscount. It may consist of negotiable notes, drafts, or bills of exchange, which have been issued or drawn, or the proceeds of which have been used or are to be used in (a) producing, purchasing, carrying, or marketing of goods (including agricultural products and livestock) in one or more of the steps of the process of production, manufacture, or distribution, (b) in meeting current operating expenses of a commercial, agricultural, or industrial business, or (c) for the purpose of carrying or trading in direct obligations of the United States.

2. Paper whose proceeds are used for permanent or fixed investment of any kind or for any capital purpose is not eligible.

3. Paper whose proceeds are used for investments of a purely speculative character is not eligible.

4. Eligibility of paper is not affected by the nature of collateral pledged to insure repayment.

5. Paper which is agricultural paper is eligible for rediscount provided it has a maturity at the time of discount of not more than nine months and was issued or drawn, or the proceeds used for:

(a) The production of agricultural products;

(b) The marketing of agricultural products, by the growers (or their co-operatives);

(c) The carrying of agricultural products by the growers pending orderly marketing; or

(d) The breeding, raising, fattening, or marketing of livestock.

6. Paper of coöperative marketing associations the proceeds of which have been used for organization expenses or to acquire any permanent investment in real estate, warehouses, or the like, is not eligible.

7. Paper of factors who re-lend proceeds to producers of raw agricultural staples is eligible if it has a maturity of not over ninety days.

8. Under a regulation effective October 1, 1937, a previous exclusion from eligibility of paper whose proceeds are re-lent is omitted. This permits finance company paper to become eligible for rediscount.

9. Bankers' acceptances are eligible when drawn under a credit opened for the purpose of financing:

(a) The shipment of goods in foreign or domestic commerce. Whenever such acceptances for any one customer exceed 10 per cent of the capital and surplus of the accepting bank, the bank must be secured throughout the life of the acceptance.

(b) The storage of readily marketable staples at home or abroad provided the accepting bank is secured throughout the life of the acceptance by the pledge of warehouse receipts or other documents of title.

cultural) transaction. If the buyer who issues the note or upon whom the draft is drawn is engaged in commerce or manufacturing, the paper is commercial because it is issued for or is drawn for a commercial purpose. If the buyer is a farmer, buying things not classified as fixed investments, the paper is agricultural. (2) When the paper is not issued or drawn directly for a certain purpose, as is the case where the borrower gives his note to his bank, the classification depends upon the use made of the proceeds. If they are used to finance the purchase of goods for resale, the paper is commercial. If proceeds are not to be used to buy goods for resale, the nature of the goods bought will determine the classification. If proceeds are to furnish working capital which can be liquidated out of current income, the paper is commercial. A satisfactory statement of the borrower may indicate this.

The Board has been especially generous in its classification of uses of proceeds of farmers' paper, which are construed to be short-time rather than long-time in character. For example, notes of farmers used to purchase agricultural implements, including tractors, and livestock (including draft animals and breeding cattle), are classed as agricultural paper and eligible for rediscount if maturing in nine months. Even notes the proceeds of which are used for draining land under cultivation are agricultural paper. If, however, the proceeds of a farmer's note are to be used to purchase a silo, it is to finance a fixed investment, and therefore is not eligible.

The Theory of Eligibility

Under the present rule of eligibility, the test applied most generally is that of liquidity. This fact is apparent from the relatively short maturities required and the rule that paper must arise out of, or the proceeds must be used for facilitating, commerce, industry, and agriculture. It seems to be the intent of both the law and the rulings of the Board that eligible paper should generally be self-liquidating in character. The issue is somewhat confused by the difficulties arising from the almost universal use of the single-name promissory note as a credit instrument, whether commercial or other types of credit are needed. Thus some method of distinguishing self-liquidating paper from investment paper was required. The rather clumsy rule that a satisfactory excess of quick assets over current liabilities may be taken as evidence of the use of proceeds for short-time working capital (which makes the paper properly eligible) has in effect made paper eligible that is not actually

self-liquidating. A continuous borrower might show a satisfactory current ratio and his paper may be classed as eligible, but his loans could be liquidated only at the cost of compelling him to shut down.

The eligibility of paper arising out of, or the proceeds of which are used for, trading in United States securities is, of course, not justified by the self-liquidating character of the transaction financed. However, with short maturities, paper secured by United States obligations may be liquidated easily. The wholesale use of "war paper" based upon the sale of Liberty and Victory bond issues of the first World War could not have been foreseen when the law was originally enacted.

Should eligible paper be self-liquidating? Some writers hold that eligibility should be limited strictly to self-liquidating paper, on the grounds that in this way member banks can be encouraged to make more loans on paper of that sort and the reserve banks can be maintained in a liquid and solvent position.⁷ The need for ultimate solvency of banks in general and the Federal reserve banks in particular is obvious. Why, one may ask, is there need for liquidity?

Liquidity has two distinct values in banking assets. Liquid loans of a short-time nature are more likely to be sound loans than are nonliquid loans. There is less room for errors in judgment in making a short-time loan than a long-time one. Second, liquidity of a bank, or ability to collect its loans, is necessary if a bank is to meet its obligation to pay out cash at all times. The reserve banks are no exception. They require liquidity of their assets, in part, in order that they may be able to accommodate member banks other than the ones already borrowing. Of course, this is unimportant in times when the unused reserves are very high. However, if loans made by the reserve banks were not liquid and were not repaid, there would be a gradual tendency for the advances of reserve banks to rise as first one and then another bank was accommodated, until unused reserves had disappeared altogether. Moreover, a need for liquidity arises out of the possibility that the reserves of the reserve banks themselves may be depleted by shipments of gold abroad. If such movements of gold brought the reserves of the reserve banks down to the legal minimum, it would be necessary for the volume of accommodation to member banks to be reduced in order to restore conditions necessary to elasticity.

⁷For a particularly partisan defense of strict adherence to the rule of self-liquidation as a test for eligibility, see Willis, H. Parker, *The Theory and Practice of Central Banking*, New York, Harper & Bros., 1936, pp. 131. *et. seq.*

But, granting that liquidity is necessary for the reserve banks, is there cause for alarm in the fact that much eligible paper is not strictly self-liquidating but represents continuous borrowing by the obligor? Let us raise another question before we seek the answer to the first. According to the view of some people, the amount of eligible paper in the hands of member banks has become dangerously small. Why not, therefore, expand the limits of eligibility to include properly margined and secured stock market paper? It is well agreed that exclusion of such paper from eligibility does not prevent the use in the stock market of funds procured by the rediscounting of commercial paper. (A new regulation now makes such paper eligible as collateral for loans under Section 10b, discussed on p. 284.) The opponents of such a change object that stock market paper is not self-liquidating and therefore would tend to choke the reserve banks with unliquid assets. The proper answer to the above questions may be derived, in part at least, by asking yet another question. What is the essential source of reserve bank liquidity? So far as the paper rediscounted is concerned, short maturity and solvency are essential, but the type of transaction out of which the paper arose is of but secondary importance. Short maturity is necessary in order that the reserve bank may have an opportunity to demand a reduction in discounts at will within a reasonably short period of time. But, in addition to short maturity of the paper offered, true liquidity on the part of a reserve bank arises from its ability to require member banks to reduce discounts (or borrowings) at reasonably frequent intervals. It is entirely possible for the reserve banks to make advances to member banks on strictly self-liquidating paper continuously and in such amounts that it would be impossible to compel them to liquidate their borrowings or discounts without precipitating a business panic. On the other hand, advances made by reserve banks to member banks to meet their seasonal or incidental needs may have a high degree of liquidity, regardless of the nature of the paper offered for discounts or security for advances.

Liquidity of the reserve banks depends not so much upon the origin of paper rediscounted, assuming it is sound, as upon the temporary character of the advances to members. If this line of reasoning is correct, the liquidity of the Federal Reserve System is more adequately provided for in the unwritten rule that members are not to remain in debt permanently than in the rules of eligibility.

Borrowing on Collateral Notes

Ordinary borrowing. In addition to rediscounting eligible paper, member banks are permitted to borrow from the reserve banks on their own notes. If commercial or agricultural paper eligible for rediscount or purchase by the reserve bank is offered as collateral, such advances may run for a period not exceeding 90 days. In addition to the use of eligible paper as collateral, member banks may borrow up to 15 days on the collateral of United States obligations, Federal intermediate credit bank debentures, and Federal Farm Mortgage Corporation bonds and Home Owners' Loan Corporation bonds when guaranteed both as to principal and interest by the United States. Moreover, nonmember banks were given the privilege of borrowing at par on government obligations at the outbreak of European hostilities on September 1, 1939.

A form of the application for the discount of such notes appears below.

APPLICATION FOR DISCOUNT OF BILLS PAYABLE

To the FEDERAL RESERVE BANK OF CHICAGO

The Bank of Date....., 19.. hereby makes application for the discount of enclosed bills payable in the amount of \$..... You are authorized to charge these obligations to our reserve account at maturity.

THE PROCEEDS OF THIS APPLICATION ARE REQUIRED FOR	1. Deposit Decline 2. Loan Demand 3. Retiring { Rediscounts { Other Indebtedness
--	---

Instructions Regarding
Proceeds or Special Comments {.

The liability of this bank at the present time, for borrowed money, exclusive of this application, is as follows:

Rediscounts	\$.....
Bills payable	\$.....
Certificates of deposit issued for money borrowed	\$.....
Total	\$.....

Paper sold without recourse	\$.....
Total deposits as of this date	\$.....
Total loans and discounts as of this date	\$.....
Government securities owned (except those pledged to secure circulation)	\$.....

Address Bank of By
 President
 Cashier.

The Federal Reserve Act originally made no provision for borrowing by members on their collateral notes. An amendment of September 7, 1916, authorized the reserve banks to make advances to member banks on their notes for a period of not over 15 days upon collateral consisting of paper eligible for rediscount, or bonds and notes of the United States. This enabled banks temporarily in need of funds to build up their reserves without rediscounting customers' paper. The bank may be reluctant to allow its customers to know it has rediscounted their paper; further, rediscounted paper with a definite maturity date is a less flexible means of obtaining funds than the collateral note. Banks in cities which hold large volumes of government securities utilize them as collateral in preference to eligible paper. Country banks normally have few government securities and therefore resort to eligible paper collateral.

The 1933 banking law changed the limit on notes secured by eligible paper from 15 days to 90 days in the interests of country banks, whose demand for reserve bank accommodation is likely to extend over a longer period than that of the city banks. This should add to the popularity of this form of accommodation among country banks.

Under the provisions of the 1933 law, any member bank which obtains funds from the reserve bank by means of its collateral note is subject to the rule that, if warned by the reserve bank or the Board against increasing its loans against stocks and bonds, any increase in such loans during the life of its loan at the reserve bank makes the loan immediately due and payable, and the bank loses its right to borrow at the reserve bank for some period designated by the Board.

Relative importance of rediscounting and direct borrowing on collateral notes by member banks. It is significant that collateral notes secured by United States Government obligations are a more important instrument for obtaining credit from the reserve banks than eligible paper. This fact is clearly shown in Tables 24 and 25. The figures cover years when the open-market operations of the reserve banks did not swallow up member bank borrowing and rediscounts.

Emergency borrowing. During the banking troubles of 1932 and 1933, member banks in some instances were without sufficient eligible paper to enable them to obtain help from the reserve banks. Two amendments were added in 1932. The first (Section 10a) permits member banks without eligible paper to borrow from the reserve banks by forming groups of five or more.

TABLE 24

TYPES AND ANNUAL VOLUME OF BILLS DISCOUNTED FOR MEMBER BANKS
BY THE FEDERAL RESERVE BANKS *

(Volume of Bills in Thousands of Dollars)

<i>Rediscounts:</i>	1926	1927
Commercial and agricultural paper	\$ 1,938,435	\$ 1,323,977
Demand and sight drafts	12,676	9,076
Bankers' acceptances	175	214
Trade acceptances	20,316	15,897
Paper secured by U. S. Gov't obligations	13,554	8,986
<i>Member Bank Collateral Notes:</i>		
Secured by U. S. Gov't obligations	\$28,178,295	\$24,145,934
Secured otherwise	7,518,686	6,430,523
<i>Average Maturity of Bills:</i>		
Rediscounted bills	54.28 days.	57.97 days.
Collateral notes	5.48 days.	5.58 days.

* *Annual Report of the Federal Reserve Board*, 1927, p. 154.

TABLE 25

BILLS DISCOUNTED FOR MEMBER BANKS AND HELD BY THE FEDERAL
RESERVE BANKS *

(In Thousands of Dollars)

<i>Rediscounts:</i>	December 31, 1927	December 31, 1929
Commercial and agricultural	\$ 87,803	\$170,995
Demand and sight drafts	182	83
Bankers' acceptances		31
Trade acceptances	1,400	2,177
Paper secured by U. S. Gov't obligations	163	755
	<hr/>	<hr/>
	\$ 89,548	\$174,041
<i>Collateral Notes:</i>		
Secured by U. S. Gov't obligations	\$417,566	\$352,773
Secured by eligible paper	74,389	105,607

* *Annual Report of the Federal Reserve Board*, 1927, p. 138; 1929, p. 132.

The liability of each bank of the group for funds jointly borrowed is limited to an amount equal to the proportion of its deposits to the total deposits of the group. Security for loans advanced to members of the group is provided by the deposit of suitable collateral with a trustee. Another amendment (Section 10b) permitted the reserve banks in exceptional circumstances to make advances directly to members without adequate eligible paper, when secured to the satisfaction of the reserve bank. This right expired in March, 1935.

Borrowing on noneligible paper under Section 10b.⁸ This section permits a reserve bank, under regulations of the Board of Governors of the Federal Reserve System, to make advances to member banks upon their demand or time notes having maturities of not over four months, secured to the satisfaction of the Federal reserve bank. Such notes are to bear interest of not less than $\frac{1}{2}$ of 1 per cent above the highest prevailing rediscount rate. Since the cost of this type of advance is greater than the cost of rediscounting or borrowing upon United States bonds or eligible paper, it will be used only in case of necessity. It should remove completely the necessity for group borrowing as permitted by Section 10a.

The regulation of the Board of Governors specifically names the types of paper eligible as collateral for advances under this section.⁹ In explaining its choice of eligible collateral which may be used by member banks borrowing under Section 10b, the Board says: "Experience has demonstrated that the solvency of banks is better safeguarded by careful regard to the quality of the paper that they acquire than by strict observance of the form that this paper takes. Strict eligibility requirements in the past did not save the banking system from collapse. Greater emphasis on soundness and less emphasis on form is, therefore, a sound banking principle."

The Board's interpretation of Section 10b very largely nullifies the elaborate rules governing eligibility requirements for rediscounts, since, by the payment of a slightly increased rate, a member is assured of accommodation without regard to whether or not it possesses eligible paper. If advances to members under this section are intelligently made for strictly short-time needs, they will be beneficial. It would, indeed, be most unfortunate, however, if they should become the means of permanently shift-

⁸ This section was added in 1935.

⁹ These types comprise the following:

1. Paper otherwise eligible but with a maturity greater than that permitted under the rules of eligibility for rediscount.
2. Investment securities.
3. Paper arising from security loans made subject to the provisions of Regulation U.
4. Mortgages insured under Titles I and II of the National Housing Act.
5. Other approved real estate mortgage loans.
6. Obligations of the Federal home loan banks and the Federal farm credit institutions, regardless of maturities.
7. General obligations of any state or political subdivision thereof.
8. Installment sale paper.
9. Any other assets which are satisfactory to the Federal reserve bank.

ing unliquid assets from member bank portfolios to those of the reserve banks.

Marginal collateral. Reserve banks may and do require marginal collateral against advances to member banks. This is likely to occur when a member is borrowing excessively or when the paper offered is not entirely satisfactory. The extra collateral offered may or may not be, in itself, eligible for rediscount.

The Board of Governors is attempting to minimize the practice of requiring additional collateral. When reserve banks require more than a 25 per cent margin of excess collateral on rediscounts or advances to member banks (except on the collateral of United States obligations), they must explain the reasons in a special report to the Board. Moreover, whenever a member bank offers United States obligations, direct or guaranteed, as collateral for loans at a reserve bank and receives less than the face value, special explanation must be made by the reserve bank to the Board. Thus, the previously unwritten policy of the Federal Reserve System of making loans on government securities at par, regardless of the market price, is now formally recognized by the Board in its regulations.¹⁰

Collection of advances to members. When a member has borrowed on its collateral note, the reserve bank charges the amount of the face of the note to the bank's account on the due date. When paper has been rediscounted, it is returned to the member bank at a suitable time before it is due and charged to the member's reserve account on the day it is due. If the paper is payable elsewhere than at the location of the member, the reserve bank will, if instructed, send the paper through its collection system for collection. On the due date the amount is charged to the member's reserve account, and when the proceeds are received by the reserve bank, they are again credited to the member's account.

Direct loans to industry. It was the original intention of the framers of the Federal Reserve Act that the Federal reserve banks should be bankers' banks. Their dealings with the general public were to be limited to the purchase and sale of bills of exchange and certain types of securities in the open market. The failures of 1931 and 1932 so shattered public confidence in the solvency of banks that bankers generally attempted to increase the liquidity of their assets by loan reductions. Business-

¹⁰ *Regulation A*, Section 3(d); (e).

men complained that they were unable to receive accommodation at their banks necessary to finance current trade. In answer to this complaint, the following amendments to the law have provided for direct advances to industry by the reserve banks:

1. Section 13 was amended (July 21, 1932) to permit the Federal Reserve Board (now the Board of Governors), upon a vote of not less than five members, to authorize any Federal reserve bank to discount for individual firms obligations technically eligible for rediscount and satisfactorily secured. The borrowing firm must prove its inability to obtain adequate credit elsewhere.

2. Section 13 was again amended (March 9, 1933) to permit the Federal reserve banks, under regulations of the Board, to make advances to individuals or firms (including banks) for periods of not over 90 days on the security of direct obligations of the United States.

3. Section 13b was added (June 19, 1934) providing that, under authority of the Board, reserve banks may make loans to established industrial or commercial firms unable to obtain necessary credit on a reasonable basis elsewhere. Such loans are for working capital purposes and extend for a period of not over five years. The reserve banks may also purchase or agree to purchase such obligations from any financial institution which agrees to assume at least 20 per cent of any loss which may arise. The gross amount of such loans is limited to the combined surpluses of the reserve banks on July 1, 1934, plus any amount not exceeding \$139,299,557 which might be paid over to the reserve banks by the Secretary of the Treasury.

CHAPTER XXI

FEDERAL RESERVE SYSTEM (CONTINUED)

Federal reserve bank obligations. The outstanding liabilities of the reserve banks are deposits and notes. These obligations originate in the same manner as do those of ordinary banks—namely, from the deposit of cash and the making of loans. Further, they resemble the deposit and note obligations of ordinary banks in another way: to the owners of such obligations they are the equivalent of cash.

It thus happens that the cash resources of ordinary banks are made up mainly of the obligations of the reserve banks; to a lesser extent, silver certificates and United States notes constitute a part of the currency held by banks. Moreover, deposits in banks other than the reserve banks are the equivalent of cash to a depositing bank and are especially important in the case of nonmember banks. However, variations in the cash resources of member banks and currency in hand-to-hand circulation consistently reflect variations in the obligations of the reserve banks.¹

Federal reserve notes. It will be recalled that one of the major defects of the American banking system prior to the establishment of the Federal reserve banks was the inability of banks to meet seasonal currency demands without causing undesirable pressure and disturbance in the central money markets. As was pointed out in the discussion of that problem, the ability of the banking system to meet demands for currency and for loans resulting in more deposit credit is dependent not so much upon the form of bank note issue available as upon the existence of adequate excess reserves. The reserve banks, as we have seen, are in a position to hold excess reserves. The effectiveness of these excess reserves in providing currency elasticity is enhanced by the

¹It must be pointed out that this would not necessarily be strictly true if gold movements into or out of the country were operating to affect bank reserves and the law permitted banks to hold gold among their assets.

ability to issue notes on a minimum gold certificate reserve of 40 per cent.²

Federal reserve notes are the obligation of the United States Government, and since the act of June 5, 1933, which repealed the gold clause in contracts, they are full legal tender. Further, they are the obligation of the issuing reserve bank. One reserve bank may not pay out the notes of another reserve bank under penalty of a 10 per cent tax. Instead, they must be returned to the issuing bank.

The requirements for Federal reserve note issue are:

1. Application is made by the reserve bank to the Federal reserve agent, who receives notes from the Board of Governors of the Federal Reserve System.

2. The application for notes must be accompanied by a tender of collateral to an amount equal to the notes issued to the reserve bank. This collateral may consist of:

- (a) Notes, drafts, bills of exchange, or acceptances acquired under Section 13 of the Federal Reserve Act. This includes rediscounted eligible paper and collateral notes of member banks secured by eligible paper or government bonds. Such collateral shall not include agricultural paper with a maturity in excess of six months, unless secured by readily marketable staple agricultural products or chattel mortgages upon livestock being fattened for market. Advances made by the reserve banks to members under regulations of the Board in accordance with the provisions of Sections 10a and 10b are also not available as collateral for Federal reserve notes.
- (b) Bills of exchange indorsed by a member bank and bankers' acceptances bought in the open market.
- (c) Gold certificates (including gold before January 30, 1934).
- (d) Direct obligations of the United States. The privilege of using these as collateral was first granted February 27, 1932, on a temporary basis and was periodically renewed for limited periods. The amendment of June 2, 1945, made the privilege a permanent one.

²One should notice, however, that this is true only because the reserve banks largely refrain from expanding their credit for other than seasonal and emergency needs of members.

3. Each reserve bank is required to maintain a reserve in gold certificates of not less than 25 per cent of its notes in *actual circulation*.

- (a) Gold certificates deposited with the agent as collateral may be counted as part of the 25 per cent gold reserve against notes, but not toward the satisfaction of the 25 per cent reserve requirement against deposits.
- (b) Gold certificates deposited with the Board of Governors in the Interdistrict Settlement Fund may be counted as reserve against both note issues and deposits.

4. Reserve banks must maintain a redemption fund for Federal reserve notes in the Treasury of the United States. This fund must equal at least 5 per cent of the notes issued without gold certificate collateral and may be counted in satisfaction of the 25 per cent reserve requirement. The Federal reserve agent also maintains a redemption fund with the Treasury against such part of the Federal reserve notes as are backed by gold certificates in his hands.

5. The Board of Governors may, through the agent, grant or reject an application of a reserve bank for Federal reserve notes. Further, it may levy an interest charge, if it sees fit, on notes issued against collateral other than gold certificates.

Significance of collateral behind Federal reserve notes. It seems to have been the belief of those responsible for the original form of the Federal Reserve Act that currency should be issued only against self-liquidating commercial paper. Thus, it was thought, an automatic elasticity would be introduced into the note issue. In times of active business, member banks would rediscount businessmen's notes, and the reserve banks in turn might use such notes as collateral for currency as needed. A slackening of business, with a consequent decline in loan and currency requirements, would be accompanied by a reduction in rediscounts, a reduction in collateral held against notes, and thus a reduction of note issue. Since the claims of the holders of Federal reserve notes against the issuing banks are prior to all other claims, it is unreasonable to believe that the segregation of collateral against Federal reserve notes was made for the purpose of adding to the security of the notes. However, the faith in the segregation of special collateral as a device for insuring the existence of the right amount of Federal reserve notes has been weakened, particularly with the gradual expansion of paper eli-

gible for use as collateral. On September 7, 1916, member banks were authorized to borrow at the reserve banks on their own 15-day notes secured by eligible paper or United States bonds. This paper was not made eligible as collateral for note issue until June 21, 1917. In the meantime, the 1916 amendment made available as collateral bills of exchange indorsed by member banks and bought in the open market by the reserve banks. The amendment of 1917 provided that not only collateral notes of member banks, but also gold and gold certificates might be used as collateral for Federal reserve notes. At present the most ardent believers in the efficacy of securing bank notes by commercial paper collateral must seriously question the genuine importance of collateral requirements under the existing law.

At times the collateral requirements have proved embarrassing to the Board of Governors in the execution of its credit policy. The best example arose in 1931 and 1932. At that time the Board was following a policy of building up the reserves of member banks through reserve bank purchases of government bonds in the open market. As a result of this practice and the declining demands for bank credit, borrowing and rediscounting by member banks had fallen to a point of relative insignificance. The reserve banks were therefore without discounted paper eligible to be used as collateral for Federal reserve notes and were compelled to resort to the use of gold and gold certificates. The "free gold" (that part of the gold holdings which was not being utilized as note collateral and required reserve against deposit and note liabilities) was thus reduced. Any considerable demand for gold for export or hoarding depleted the free gold to the danger point. Under these circumstances it was feared that the reserve banks would be compelled to reverse their open-market operations, sell bonds, and force member banks to rediscount in order that collateral for note issue in substitution for gold might be obtained. This difficulty led to the temporary provision that the Board of Governors might permit reserve banks to offer direct obligations of the United States as collateral. By so doing, the reserve banks could continue to ease the money market by purchasing and holding securities in the face of a drain of gold. The 1945 amendment very properly removes all restrictions on the use of United States obligations as collateral and constitutes a real improvement. It would be quite as sensible, however, to abolish entirely collateral requirements for Federal reserve notes.

Federal reserve bank notes. In addition to the issue of Federal reserve notes, the reserve banks were originally permitted to

issue a bond-secured note similar to the notes of national banks. The occasion arose out of the expectation that national banks, freed by the new act from the necessity of maintaining in the Treasury a deposit of government bonds bearing the circulation privilege, would wish to dispose of these bonds and reduce their circulation. To facilitate this disposal, the reserve banks were authorized to purchase not over \$25,000,000 of the bonds annually. The reserve banks were given the option of converting these bonds, which bore 2 per cent interest, into other United States obligations without the circulation privilege or of using them as a basis for Federal reserve bank notes in the same manner as did national banks. Actually, the bonds so sold to the reserve banks were unimportant, and the issue of Federal reserve bank notes was correspondingly small. However, at two particular times Federal reserve bank notes came into use in a manner not intended by the original law.

In 1918 Congress passed the Pittman Act, which provided for the sale of \$350,000,000 of silver dollars as bullion and the withdrawal of a corresponding amount of silver certificates. To fill the gap in the circulating medium without forcing an extra burden upon their reserves, the reserve banks were authorized to issue Federal reserve bank notes to an amount equal to the silver dollars sold as bullion upon deposit of United States certificates of indebtedness or one-year gold notes with the Treasurer of the United States. The law provided for the repurchase of domestic silver at \$1 per ounce to an amount sufficient to replace that originally melted and sold. The Federal reserve bank notes were to be retired as silver was rebought and coined. The maximum volume of Federal reserve bank notes outstanding under this law was \$261,039,000. The repurchase of silver and the retirement of the notes was completed in the early 1920's. By the end of 1922 Federal reserve bank notes in circulation were reduced to \$2,770,000.

The second important occasion for the use of Federal reserve bank notes arose in connection with the banking holiday of March, 1933. At that time all of the banks were closed by presidential proclamation in order to stop the rapidly increasing panic and bank failures. The problem of reopening the solvent banks involved not only the determination of which banks should be opened, but also the method to be used to assure the possibility of meeting any renewed public demand for currency in exchange for bank deposits. The matter was handled by: (1) giving all banks, both member and nonmember, the right to borrow on adequate security from the reserve banks during the emergency; and (2) authorizing the reserve banks to issue Federal reserve bank

notes upon the security of any United States bonds or upon any notes, drafts, or bills of exchange acquired under the law and deposited with the Treasurer. These notes could be issued to the full face value of United States obligations and to 90 per cent of the value of other paper. Thus there was available an almost limitless supply of currency for the reopened banks to meet any public demand for currency on their reopening. The Federal reserve bank notes were especially appropriate for emergency currency. The fact that they were the obligation of the reserve banks, and legal tender, guaranteed their acceptability; they required no gold reserve, and their quantity was thus limited only by the volume of paper which found its way into the reserve banks. This privilege expired with the passing of the emergency. However, the reopening of the banks was not accompanied by an increase in hoarding, and the use of this emergency form of Federal reserve bank notes was unnecessary. The high point in the issue was in December, 1933, when it reached \$208,000,000.

The only two issues of United States bonds bearing the circulation privilege were called for redemption July 1 and August 1, 1935.³ With their retirement and the expiration of the emergency provisions described above, the possibility of further issues of Federal reserve bank notes come to an end.* The amendment of 1945 abolished the authority to issue Federal reserve bank notes.

Federal Reserve Bank Management

The boards of directors of the Federal reserve banks. Each of the twelve Federal reserve banks is directly under the management of a board of nine directors. These directors are divided into three classes. Class A directors, three in number, are representatives of the member banks of the district and are chosen from the ranks of the bankers themselves. Class B directors, also three in number, are persons actively engaged in business other than banking. Both Class A and Class B directors are elected by the member banks. For purposes of such election, the Board of Governors classifies member banks of each district into three groups according to size (large banks, middle-sized banks, and small banks), and the banks of each group elect one Class A and one Class B director. Any member bank may nominate a candidate for each class. Each member has one vote,

³ *Federal Reserve Bulletin*, July, 1935, p. 413.

* To conserve labor and materials during the war the Board of Governors authorized the Federal reserve banks to utilize Federal reserve bank notes printed as emergency currency during the banking holiday in March, 1933. These notes, amounting to about \$600,000,000, were issued in a manner identical to the regular Federal reserve note issue. The saving in printing costs is estimated at \$300,000. (*Federal Reserve Bulletin*, January, 1943, p. 12.)

with the limitation that one member may have the privilege of nominating and voting for directors when two or more member banks in one Federal reserve district are affiliated with the same holding company. The remaining three of the nine directors are appointed by the Board of Governors of the Federal Reserve System and are known as Class *C* directors. One director, who must be a person of "tested banking experience," is designated as Federal reserve agent and chairman of the board. He is the official representative of the Board of Governors in all deliberations on the affairs of the reserve bank. Another director from Class *C* is named deputy chairman. The Federal reserve agent appoints such assistants as seem necessary.

The chief executive officer, responsible for the actual administration of the affairs of a reserve bank, is the president. The president and vice-president are appointed by the board of directors of a reserve bank for a term of five years, subject to the approval of the Board of Governors. Previous to the Banking Act of 1935, the board of directors appointed an executive officer commonly known as the governor of the bank. The new arrangement strengthens the hand of the central authority, the Board of Governors, in its management of each reserve bank, since it may indicate its approval or disapproval of a president of a particular reserve bank every five years.

Management of Federal reserve bank branches. The Board of Governors is authorized to permit or require reserve banks to establish branches within their respective districts, each branch to be managed by a board of directors of not more than seven nor less than three. A majority of one is appointed by the reserve bank and the remainder by the Board of Governors.

The Board of Governors. Under the 1935 amendments to the Federal Reserve Act, the chief executive body of the Federal Reserve System is now called the Board of Governors of the Federal Reserve System, instead of the Federal Reserve Board as it was previously designated. Its membership is made up of seven appointees of the President, who are approved by the Senate. Not more than one member may be appointed from any one district, and "the President shall have due regard to a fair representation of the financial, agricultural, and commercial interests and geographical divisions of the country." Appointments hold for fourteen years, and the terms are so arranged that the term of only one member will expire during any two-year period. Members are not eligible to reappointment, nor may they resign their positions before the end of their terms and accept any position with a member bank within two years. Two members are ap-

pointed as chairman and vice-chairman, respectively, for four-year periods. The one designated as chairman is the chief executive officer.

The new organization of the Board became effective February 1, 1936. Besides involving a reduction in numbers from eight to seven, it divorces the Board of Governors from the fiscal policies of the Federal Government by depriving the Secretary of the Treasury and the Comptroller of the Currency of their membership, which they previously held *ex officio*. This change had long been desired by those who felt that credit policies of the banking system should not be made subservient to the fiscal needs of the government or to the political necessities of the existing administration. It seems doubtful that it will ever be possible to prevent credit policies of the Board of Governors from being influenced by the government's needs in time of war or other emergency, if indeed it would be desirable to do so. However, the change makes for a desirable enhancement of independence of the Board of Governors.

Powers of the Board of Governors. Many of the powers of the Board of Governors have been mentioned in connection with the particular banking functions to which they apply. Although it is unnecessary to repeat all of these powers here, certain powers pertaining to the general management of the Federal Reserve System must be considered:

1. Each Federal reserve bank has the power to establish rates of discount on each class of paper, with "a view of accommodating commerce and business." Such rates are established every 14 days, or oftener if the Board of Governors desires it, and are subject "to review and determination" of the Board. The requirement that rediscount rates be set every 14 days, or oftener, was added in 1935 to increase the authority of the Board over rediscount rates. Previously the Board had no real power to compel reserve banks to change their rates. Now, since new rates must be set at least every two weeks, the Board is in a position to control them by virtue of its veto power.

2. The Board of Governors may, in its discretion, examine the affairs of each reserve bank and member bank. It shall publish weekly statements of the condition of each reserve bank.

3. By a vote of five members, the Board may require Federal reserve banks to rediscount for one another.

4. The Board of Governors may suspend, for a period not to exceed 30 days, plus renewals for 15 days, any of the reserve re-

quirements specified in the Federal Reserve Act, provided a graduated tax is placed upon the deficiencies allowed. This power includes, obviously, authority to suspend the reserve requirements for members as well as for the reserve banks. However, the power to suspend reserve requirements of member banks has never been used, and it is unlikely that any need for such suspension will arise. Member banks in general may be relieved of reserve shortage either by rediscounting or by obtaining other direct advances from the reserve banks or through the expansion of open-market purchases of United States obligations by the reserve banks. The plight of particular members who find themselves short of reserve, with no assets on which to obtain more, is not likely to provoke use of such sweeping powers as a general suspension of member bank reserve requirements, particularly under the liberalized rediscounting and borrowing provisions of the law. The Board may vary legal reserve requirements for member banks between a lower limit fixed by the statutory amount and twice that amount.

The power to suspend reserve requirements of the reserve banks is qualified by the statutory requirement that, in case the gold certificate reserve held against Federal reserve notes falls below 25 per cent, the Board shall establish a graduated tax. This tax shall be 1 per cent per annum upon such deficiency so long as reserves are not less than 20 per cent. Below this figure, each additional deficiency of $2\frac{1}{2}$ per cent bears an extra tax of not less than $1\frac{1}{2}$ per cent. This tax is paid by the reserve bank but is passed on to members by being added to the rates charged members for rediscounts and advances.⁴

5. The Board may suspend or remove any officer or director of any Federal reserve bank and may require reserve banks to write off doubtful or worthless assets. Further, it may suspend, for violation of the law, the operations of any reserve bank.

6. The Board is required to make an annual report to Congress. Under the amendments of the 1935 act, this report must include a full account of its actions and those of the Open Market Committee on all questions relating to open-market and credit policies.

The Open Market Committee. The Open Market Committee consists of twelve members, seven of which are members of the

⁴ This graduated tax is not to apply to deficiencies in reserves arising from an expansion in open-market purchases of bonds which might occur under Section 43 of the act approved May 12, 1933 (the inflation rider of the Agricultural Adjustment Act).

Board of Governors. The other five are chosen by the reserve banks in such a manner that one represents the reserve bank of New York, one the reserve banks of Boston, Philadelphia, and Richmond, one the reserve banks of Chicago and Cleveland, one the reserve banks of St. Louis, Atlanta, and Dallas, and one the reserve banks of Minneapolis, Kansas City, and San Francisco.

It is evident that the Board of Governors may, if it acts as a body, completely dominate the actions of the Committee. Since it is unlikely that such unity of action will ever materialize, the representatives of the reserve banks may be expected to play an important part in the Committee's decisions. The 1935 act puts the Open Market Committee absolutely in control of the open-market operations of the reserve banks, since none "shall engage or decline to engage in open market operations under section fourteen of this act except in accordance with the direction of and regulations adopted by the Committee." The actions of the Committee are to be "governed with a view to accommodating commerce and business and with regard to their bearing upon the general credit situation of the country."

The open-market operations of the reserve banks have always been subject to the "rules and regulations" of the Board, but the original act provided no machinery for centralized control of this important function. Originally the open-market operations were intended mainly for the purpose of supporting and developing the market for bankers' acceptances and treasury bills, and to provide the reserve banks with earning assets. Each reserve bank made its purchases and sales in the open market independently. Later, the need for some co-ordination in such matters appeared, with the result that in 1922 an informal committee was formed consisting of the governors of the five largest reserve banks. This committee at first undertook merely to co-ordinate the actual purchase and sales of government securities. In October of the same year, it undertook to make recommendations in regard to open-market transactions.⁵

In 1923 the Board set up an open-market investment committee, consisting of the same members as the old committee, with the duty of recommending open-market operations to the Board and to the reserve banks, and to execute them through the open-market investment account.⁶ Purchases were made in the open

⁵ Burgess, W. Randolph, *The Reserve Banks and the Money Market*, New York, Harper & Bros., 1927, first edition, pp. 216-217.

⁶ *Ibid.*, pp. 219-220.

market and prorated among the several reserve banks in amounts previously agreed upon by such banks.

The act of 1933 created a Federal Open Market Committee, consisting of one representative of each Federal reserve bank, to confer with the Board and to execute open-market policies as determined by the Board. Participation in open-market operations was at that time still optional with the individual reserve banks. It was not until 1935 that participation was made compulsory.

The Federal Advisory Council. The board of directors of each Federal reserve bank annually chooses one representative for membership on the Federal Advisory Council. This Council meets in Washington four times a year, or oftener, at its own option or upon the call of the Board of Governors. It has the power to confer with the Board on general business conditions and to advise the Board on general matters of policy.⁷ Since the Council is without any real authority, it is impossible to measure its effectiveness, but its membership contains some of the best-informed and most experienced bankers in the respective districts represented, and its advice must, therefore, be of considerable value to the Board.

State Bank Membership

When the Federal Reserve System was organized, national banks were required, on penalty of loss of charter, to become members and subscribe to stock in the Federal reserve banks. State banks, however, were not subject to this compulsion, and they quite generally refrained from joining. As late as December 31, 1916, only 37 state banks were reported as members.

In addition to the natural conservatism of bankers, which led them to avoid joining the yet untried system, there were some definite objections to state bank membership at the time. The original Federal Reserve Act provided for membership by state banks under the conditions that: ⁸

1. Their paid-up unimpaired capital be sufficient to entitle them to become national banks in the location where situated.
2. They be issued a permit by the Federal Reserve Board.
3. They conform to the reserve requirements of the Act.

⁷ Federal Reserve Act, Section 12.

⁸ Federal Reserve Act, Section 9, as enacted December 23, 1913.

4. They conform to the provisions of the law imposed upon national banks as to:

- (a) The size of individual loans.
- (b) The prohibition against the purchase of or loans on the bank's own stock.
- (c) The impairment of capital.
- (d) The payment of unearned dividends.

5. They conform to any rules and regulations set up by the Board.

6. They make reports to the Comptroller in the same manner as national banks and submit to examination by the Comptroller and by the Federal reserve bank or the Board at the option of the examining authorities.

These restrictions were objectionable to most state banks. In many states the limit on individual loans was more lenient than the national bank limit. At first the reserve requirements of the Federal Reserve System did not satisfy state reserve requirements. Further, the possibility of examination by the Comptroller of the Currency and the representatives of the Federal reserve banks, in addition to examination by state authorities, was not attractive, even though in practice the national bank examiners never did examine state member banks.⁹ The final omnibus authority of the Federal Reserve Board to formulate rules and regulations under which state member banks might operate was so uncertain that state banks doubted the advisability of joining the Federal Reserve System. Moreover, once they were in the system, there was no statutory provision for their voluntary withdrawal. This omission was considered a serious drawback in spite of the Board's regulation permitting termination of state bank membership upon written notice twelve months before the date of withdrawal.¹⁰

State bank membership during the First World War. The entry of the United States into the First World War early in 1917 and the resultant pressure for financing the governmental requirements made it important that the banking structure be strengthened by bringing into the Federal reserve fold a substantial part of the nonmember state banks. To this end the amendments of the Federal Reserve Act of June 21, 1917, clarified and

⁹ Federal Reserve Bank of Richmond, "State Bank Membership," *Letter No. 14*, December, 1923, p. 8.

¹⁰ *Ibid.*, p. 7.

ameliorated the state bank membership requirements. More specifically, the amendments provided that:

1. Subject to the provisions of the Act and the regulations of the Board, state banks and trust companies, on becoming members, might retain their full charter and statutory rights and might continue to exercise all corporate powers granted to them by their charters.

2. Reserve banks might rediscount for state member banks only the paper of borrowers who were in debt to the bank by an amount not over 10 per cent of the banks' capital and surplus. This limit did not apply to bills of exchange and paper owned by the borrower and subsequently discounted by him at the bank. The old requirements that state members should conform to the national bank rule regarding the size of individual loans was thus abandoned for all paper except that offered for rediscount.

3. State members should make at least three annual reports to the Federal reserve banks, instead of to the Comptroller of the Currency as the old law required.

4. State member banks should not be subject to examination by the Comptroller, as in the original law.

5. State member banks might withdraw from membership in the system after six months' written notice.

In addition to the improvements made in the law as a means of encouraging the admission of state banks to the system, pressure was put upon them to join as a matter of patriotic duty. President Wilson called attention to the modifications in the law and urged that all banks able to qualify as members should join the system. From June 21, when the law was amended, until the end of 1917, membership among state-chartered banks increased from 53 to 250, while the resources of the state member banks increased from \$825,000,000 to \$5,000,000,000.¹¹ By the end of 1918, state bank members numbered 930, with resources of \$7,482,000,000, and by the end of 1920 they numbered 1,487, with resources of \$10,370,253,000.

State bank membership after the First World War. Subsequent legislation further increased the attractiveness of membership. In 1922 the rules governing the right of state members to rediscount were modified to permit the rediscounting of eligible paper of borrowers who were not in debt by an amount greater than that which would have been legal if the state bank were a

¹¹ *Ibid.*, pp. 15-17.

national bank. This put the state member banks on a par with the nationals. In 1923 the law was amended to permit state banks to join the system if they had a paid-up and unimpaired capital of 60 per cent of the amount necessary to become a national bank in the same location. Banks joining under this provision were required to set aside as additions to capital at least 20 per cent of their net income each year, and to conform to regulations set up by the Federal Reserve Board. The Board ruled that such banks should increase their capital to the full required amount within five years and should set aside 50 per cent of the annual net earnings or all net earnings above 6 per cent of the capital for this purpose.¹² The reduction in capital requirements for membership was made to attract the smaller country state banks, many of which possessed less than the required capital.

Present requirements for state bank membership. The Banking Act of 1933 introduced further changes into the state bank membership situation. It restored the original requirement that state banks becoming members should possess the same capital as that required of national banks similarly located. However, an exception was made in the case of state banks located in places with a population of less than 3,000. Such banks, if organized before June 16, 1933, or, regardless of the date of organization, if insured before admission to the Federal Reserve System, are permitted to become members with a minimum capital of \$25,000. The law now also provides for the admission to membership of Morris Plan banks and mutual savings banks.

Advantages of state bank membership. Two main reasons have been advanced for urging or even compelling state banks to become members of the Federal Reserve System. First, the banks themselves are benefited by having access to the lending power of the reserve banks in time of temporary seasonal need or emergency need for funds. Second, the banking system as a whole, it is claimed, will be strengthened by bringing the state banks under the control of the reserve banks. Thus, a degree of uniformity of regulation and control is made possible in spite of the diversity resulting from Federal and state charters.

In respect to the first argument, one must admit the usefulness of membership to the more active commercial banks. Accommodation of commercial customers often requires an extension of credit which results in a deficiency of reserves. Unless

¹² *Regulation H*, Series of 1928, Section I.

the bank carries ample secondary reserves other than rediscountable paper, reserve bank accommodation is important. In the past, membership for banks without a large amount of active commercial business was of little practical importance except for its prestige value.

Such banks in normal times had little occasion to rediscount, since they were in a position to make new loans only as unused reserves appeared. Their deposits were not of a volatile nature and therefore not likely to cause a heavy demand for cash on short notice. In fact, small members frequently made no use of their rediscount privileges. The doubtful nature of membership advantages was accentuated by the fact that such banks had little paper eligible for rediscount or usable as collateral for direct borrowing.

During the last few years the situation has changed to some extent. The danger of depositors' runs made the rediscount privilege more vital as bank failures shattered public confidence. This reason for membership has been largely lost, however, with the advent of deposit insurance. The 1935 banking act permits borrowing by member banks on collateral notes satisfactorily secured. This renders membership more useful than before because it makes the rediscount services of the reserve bank available to any member with sound assets, whether or not these be technically "eligible."

The second argument for membership is a more doubtful one. There is little evidence that the members of the Federal Reserve System, as such, have been more carefully regulated than the nonmember banks. State bank members in the past have not been subjected to any careful scrutiny by the reserve bank authorities. Instead, the state bank examinations were normally accepted as sufficient to satisfy the reserve bank requirements so long as nothing radically wrong appeared. In 1934 the Board announced that thereafter the examination of state member banks would be made by special examiners working for the reserve banks, approved by the Board of Governors. These examiners, working under the direction of the Federal reserve agent, examine each state member bank at least once each calendar year, either independently or jointly with state banking authorities.¹³

Objections to membership. In spite of the modifications of the rules governing membership mentioned above, state banks

¹³ *Annual Report of the Federal Reserve Board, 1934, p. 54.*

have quite generally refrained from joining the system. This has been particularly true of the banks in smaller towns. The objections to membership voiced by such banks may be summarized as follows:

1. In many instances conformance with the minimum capital requirements is difficult.

2. Member banks must necessarily participate in par collection and refrain from making exchange charges on checks presented through the mails. This is important to many nonmember banks. Forty-seven nonpar banks in one Federal reserve district reported receipts from exchange charges varying from \$125 to \$500 per month.

3. Before 1933 nonmember banks carried their legal reserve balances, in part at least, as deposits with their city correspondents, who paid interest on such balances. The reserve banks have never paid interest on member bank balances deposited with them. Under the 1933 banking act all member banks are prohibited from paying interest on demand deposits. Since city correspondents are normally members, the objection that membership results in a loss of interest on reserve balances has lost its validity.

TABLE 26

NUMBER OF MEMBER AND NONMEMBER BANKS *

Date	Total All Banks	MEMBER BANKS			NONMEMBER BANKS	
		Total	National	State	Mutual Savings	Others
June 23, 1915.....	26,605	7,614	7,597	17	639	18,352
June 20, 1917.....	27,495	7,652	7,599	53	632	19,211
June 30, 1919.....	28,600	8,821	7,779	1,042	633	19,146
June 30, 1921.....	30,560	9,745	8,150	1,595	634	20,181
June 30, 1923.....	29,833	9,856	8,236	1,620	628	19,349
Dec. 31, 1925.....	28,257	9,489	8,048	1,441	621	18,147
Dec. 31, 1927.....	26,416	9,034	7,759	1,275	618	16,764
Dec. 31, 1929.....	24,630	8,522	7,403	1,119	609	15,499
Dec. 31, 1931.....	19,966	7,248	6,368	878	597	12,123
Dec. 31, 1933.....	15,011	6,011	5,154	857	579	8,421
Dec. 31, 1934.....	16,042	6,442	5,462	980	579	9,021
Dec. 31, 1935.....	15,837	6,387	5,386	1,001	570	8,880
Dec. 31, 1936.....	15,628	6,376	5,325	1,051	565	8,687
Dec. 31, 1937.....	15,393	6,341	5,260	1,081	563	8,489
Dec. 31, 1938.....	15,206	6,338	5,224	1,114	556	8,312
Dec. 31, 1939.....	15,037	6,362	5,187	1,175	552	8,123
Dec. 31, 1940.....	14,895	6,481	5,141	1,342	551	7,858

* Annual Reports of the Federal Reserve Board.

TABLE 27

DEPOSITS OTHER THAN INTERBANK DEPOSITS, OF MEMBER AND
NONMEMBER BANKS *

(In Millions of Dollars)

Date	Total All Banks	MEMBER BANKS			NONMEMBER BANKS	
		Total	National	State	Mutual Savings	Others
June 23, 1915.....	19,131	6,678	6,608	68	3,951	8,502
June 20, 1917.....	26,352	10,301	9,742	559	4,422	11,630
June 30, 1919.....	33,603	19,170	12,951	6,219	4,751	9,682
June 30, 1921.....	35,742	20,637	12,991	7,646	5,575	9,529
June 30, 1923.....	40,688	23,871	14,490	9,380	6,295	10,522
Dec. 31, 1925.....	49,224	30,029	18,066	11,964	7,298	11,897
Dec. 31, 1927.....	52,909	32,063	19,662	12,401	8,344	12,502
Dec. 31, 1929.....	55,289	33,865	20,290	13,575	8,916	12,508
Dec. 31, 1931.....	45,821	27,432	17,271	10,161	10,105	8,284
Dec. 31, 1933.....	38,505	23,771	15,386	8,385	9,708	5,026
Dec. 31, 1934.....	44,771	28,943	18,519	10,424	9,828	6,000
Dec. 31, 1935.....	48,964	32,159	20,836	11,273	9,963	6,842
Dec. 31, 1936.....	53,701	35,893	23,107	12,786	10,143	7,666
Dec. 31, 1937.....	52,440	34,810	22,655	12,155	10,257	7,373
Dec. 31, 1938.....	54,054	36,211	23,497	12,714	10,365	7,478
Dec. 31, 1939.....	58,344	39,930	25,661	14,265	10,613	7,801
Dec. 31, 1940.....	65,021	46,007	29,214	16,793	10,658	8,356

* Annual Reports of the Federal Reserve Board.

4. Members must invest an amount equal to 3 per cent of their capital and surplus in the stock of the reserve bank. This bears only 6 per cent cumulative dividends, and banks sometimes complain of the modest size of this return.

In the face of these objections to membership, the advantages seem unimportant to many of the smaller banks. They quite properly hold that the large city correspondent can normally furnish exactly as good service in the way of rediscounting, lending, and the collection of checks at par as can the reserve banks. Besides, a city correspondent can hardly be dispensed with merely because a bank becomes a member of the Federal Reserve System. Participation in the call loan market or the sale of foreign exchange drafts, for example, requires city correspondent relations. Even the execution of member banks' orders for securities and commercial paper seems not to fall within the scope of the reserve banks' authority and requires the services of city correspondents.¹⁴

¹⁴ Willis H. Parker, and Steiner, William H., *Federal Reserve Banking Practice*, New York, D. Appleton-Century Co., 1926, pp. 102-104. This encyclopedic work on the Federal Reserve System makes available a vast amount of detailed information on reserve bank operations.

CHAPTER XXII

FEDERAL RESERVE CREDIT POLICY

A BANK'S credit policy is concerned with the process of making loans and involves the question of the volume and the nature of loans. The volume is necessarily determined in the light of both available reserves and the need for cash assets. The type of loan depends, within legal restrictions, upon the judgment of the banker and upon the borrowers available.

Central banks, like any others, necessarily have a credit policy which involves both the quantity and the quality of loans. The credit policy of central banks, however, is of particular social importance because central bank loans directly affect the volume of cash and cash reserves of other banks, thus determining to a considerable extent the power of the banking system as a whole to expand its loans. This arises from the fact that central bank obligations, whether in the form of notes or of deposits, are the equivalent of cash to the other banks and to the public. Thus an expansion of central bank loans gives rise to new deposit and note obligations and, in turn, to more reserves in other banks. This is true whether the central bank lends exclusively in the open market, or both in the open market and to the other banks, as do the Federal reserve banks. It is, of course, obvious that it matters little just what form the central bank loans take so far as the effect on cash reserves of other banks is concerned. They may consist of the purchase of bonds, loans to businessmen, or the rediscount of paper for other banks.

Central banks cannot be said to control absolutely the volume of cash reserves of the other banks. For example, between January 31, 1934, when the American dollar was stabilized at its present gold content, and January 1, 1941, America imported over \$14,000,000,000 in gold, which came through the hands of member banks and increased their reserves accordingly with no change in the volume of reserve bank credit. Likewise, a re-

versal of the inward flow of gold causes a reduction in member bank reserves. Changes in the public demand for currency in circulation cause similar changes in bank reserves.

Primary and secondary credit expansion. That volume of bank credit which banks extend on the basis of reserves of cash assets not arising from the loan and investment operations of the central bank is often referred to as primary expansion. Thus, if the reserve banks were completely out of the market, holding only cash assets, the member and nonmember bank loans would constitute the primary expansion. On the other hand, if the reserve banks were to lend \$1,000,000,000 and increase the cash reserves of member banks by that amount, and the member banks expanded their loans appropriately, the new bank credit resulting would be secondary expansion.

It is only the secondary expansion of member and nonmember bank credit which the central banks can control by the exercise of their credit policies. This fact explains the desire of the reserve banks to keep in touch with the money market at all times. They may do this by encouraging the banks to build up the general level of their loans and deposits to the point where they are obliged to rely partially upon reserve bank credit. Such contact is difficult to maintain in times of heavy gold imports such as America has experienced from time to time since 1920. The situation early in 1941 is a good case in point. In spite of the \$2,184,000,000 in government securities owned by the reserve banks, they were essentially out of contact with the money market by virtue of the fact that member bank excess reserves were about \$5,800,000,000. Had the reserve banks sold all of their securities and withdrawn completely from the money market, member bank reserves would still have been substantially in excess of requirements.

A new weapon of control has been provided by the Banking Act of 1935, which permits the Board of Governors to vary the legal reserve requirements for member banks in reserve and central reserve cities or for all member banks. The bottom limit is the prescribed reserves found in the Federal Reserve Act, while the maximum which the Board may set is twice that amount. It follows that control of the reserve banks over the money market can now be established more easily than before through this power to raise reserve requirements. However, when the reserve requirements were raised to the maximum in November, 1941, the increase absorbed but \$1,200,000,000 of the excess reserve supply.

Methods of Control

Power to control the volume of member and nonmember bank credit. We have seen that the reserve banks are able to exercise control over the volume of bank credit only through their control of secondary credit expansion, and that this necessitates maintenance of contact with the money market. There still remains the problem of the extent of their control over secondary credit expansion when this contact is maintained.

The whole question of the effectiveness of the attempts of reserve banks at credit control is complicated by the fact that the reserve banks are essentially lenders of last resort for the whole banking system. This means that the reserve banks are expected to lend: (1) directly to members (through rediscounting or on collateral notes); and (2) to dealers and others through the purchase of eligible bills and Treasury obligations in the open market. This expectation arises from the normal rights of membership on the one hand and the attempt to develop and maintain a bill market on the other. It follows that neither can be restricted unduly in the pursuit of credit policy. It also follows that the reserve banks must rely, for the most part, upon some form of persuasion to check applications of banks and dealers for accommodations rather than upon outright refusals.

Checks upon applications for reserve credit. These checks are primarily found in the ability of reserve banks to vary the cost of their credit by changing their rediscount and open-market buying rates. If the rates are made sufficiently high, they will have the effect of reducing applications for accommodations and, in turn, of limiting reserve bank credit. Another check exists in the form of a banking taboo against continuous borrowing by member banks at the reserve banks. To the extent that this operates, banks attempt to rediscount only for seasonal or emergency needs, being careful not to expand the whole scale of their operations upon borrowed reserves. A third check takes the form of "moral suasion." This is designed to prevent the expansion of bank credit for use in undesirable fields on borrowed reserves. A fourth check is the absolute one arising from the right of the Board and the reserve banks to withdraw rediscount and borrowing privileges from member banks which make undue use of bank credit for the "speculative carrying of or trading in securities, real estate, or commodities, or for any other purpose inconsistent with the maintenance of sound credit conditions."¹

¹ Federal Reserve Act, Section 4.

This check is in direct opposition to the position of the reserve banks as lenders of last resort and can be expected to be used charily, if at all. Fifth, the reserve bank can exercise discretion in determining the advisability of making advances to member banks in any particular instance. This power arises not only from its privilege of deciding when eligible paper is "acceptable," but also from its duty to extend credit "with due regard for the claims and demands of other member banks, the maintenance of sound credit conditions, and the accommodation of commerce, industry, and agriculture."²

Discretionary control of the volume of rediscounting. Since the Federal reserve banks hold the important position of lenders of last resort for member banks, they must be prepared to control the volume of rediscounting or at least to limit it in times of business expansion. Limiting the rediscounting privileges of particular banks is obviously one possible way of accomplishing this end. It is, of course, subject to the difficulties inherent in the exercise of discretion. These difficulties have been aptly described by Governor Benjamin Strong of the Federal Reserve Bank of New York,³ and include the following points:

1. Member banks rediscount after the occurrence of the transaction which results in an impairment of reserves. To refuse rediscount facilities at such a time would be a serious source of irritation.

2. With some members located at a considerable distance from the reserve bank, discretion is not easy.

3. The reserve bank in practice would be confronted with the necessity of determining whether or not the particular reason for reserve impairment was such as to justify aid.

4. Attempts to regulate the extension of credit to particular banks could hardly be combined into a unified policy for control of the total volume of reserve bank credit.

5. If the reserve bank refuses to rediscount for a member bank, it has actually assumed the responsibility for the refusal of loans to the bank's customers.

6. The use of discretion as a means of credit control might result in a "bureaucratic attitude" in the reserve banks toward the affairs of member banks.

² *Ibid.*

³ Burgess, W. Randolph, ed., *Interpretations of Federal Reserve Policy*, New York, Harper & Bros., 1930, pp. 190-191.

In spite of these difficulties, which make the dependence on discretion a poor method of controlling the volume of rediscounting, such a method must necessarily be relied upon at times. In cases where the uniform rediscount rate for a given district exercises no restraint upon those members in outlying territory who charge high rates to customers, discretion must necessarily be exercised to prevent an undue use of reserve bank credit by particular member banks. Also, the sentiment against continuous borrowing or rediscounting is closely related to discretion.

Under the Federal Reserve Act, as amended in 1933, it is the right and duty of the reserve banks, in granting accommodations to particular member banks, to consider the possible undue use of bank credit for speculation or other purposes "inconsistent with the maintenance of sound credit conditions." Further, the Board may suspend from all rediscount and borrowing privileges any member that persists in making undue use of bank credit. Thus there is now sufficient authority in the hands of the Board and the reserve banks to permit them to exercise direct pressure of the discretionary type if they care to do so.

The rediscount rate as an instrument of credit control. In contrast to the method of using discretion, the reserve banks may and do attempt to influence the volume of member bank rediscounts by means of the rediscount rate. The effect of these rates upon the volume of rediscounting by member banks has often been disputed. The dispute centers about the question of what rate, if any, can penalize a member bank sufficiently to reduce its willingness to rediscount. The arguments of those who hold that little can be expected in the way of restricting rediscounting by increasing the rate may be summarized as follows:

1. In many cases the divergence in customers' rates between country and city areas in any district makes it impossible to make the rediscount rate high enough to penalize the country banks without being prohibitive to the city banks, whose customers' rates are much lower. At the same time, it is impracticable to attempt to charge country banks a higher rate than the city banks, not only because of the irritation which would arise but also because it would have the effect only of driving country banks to their city correspondents for accommodation. Similar considerations prevent wide differences in the rediscount rate of different districts.

Table 28 shows the discrepancy between the rediscount rate

and the rate charged by members on paper offered for rediscount during 1923.

TABLE 28

AVERAGE CUSTOMERS' RATE ON REDISCOUNTED PAPER
AND AVERAGE REDISCOUNT RATE BY DISTRICTS, 1923 *

<i>District</i>	<i>Federal Reserve Bank Rate</i>	<i>Member Bank Rate</i>
Boston	4.42%	5.07%
New York	4.42	5.22
Philadelphia	4.50	5.31
Cleveland	4.50	5.58
Richmond	4.50	6.09
Atlanta	4.50	6.25
Chicago	4.50	5.62
St. Louis	4.50	5.59
Minneapolis	4.50	7.93
Kansas City	4.50	7.15
Dallas	4.50	8.41
San Francisco	4.44	5.84

* *Annual Report of the Federal Reserve Board, 1923, p. 7.*

Perhaps one answer to this difficulty lies in the probability that restrictions on banks in money centers will have a more vital effect on general business conditions than restrictions applied to banks in rural areas. Another is simply that in such cases the reserve banks must exercise discretion.*

2. Some critics believe that the multiple expansion possibilities of bank credit on the basis of new borrowed reserves make it impossible to shut off expansion by a high discount rate. Obviously, if a bank which borrows \$1 in new reserves can lend some multiple of \$1 (let us say \$10, for example), it would be impossible, practically, to raise the cost of rediscounting high enough to make rediscounting unprofitable. This objection needs further analysis. Multiple expansion of new reserve cash into new loans and deposits can undoubtedly take place in the banking system as a whole. Moreover, it could be easily accomplished by a single bank with a monopoly. But our previous analysis led to the conclusion that in a banking system such as ours, with its multitude of unit banks, it is likely that any given increase in the loans of one bank based upon newly acquired reserves would lead to a loss of cash approximately equal to the loans so made. Also, the larger the banking unit involved

* Burgess, ed., *op. cit.*, p. 190.

in the making of the new loans, the greater would be the probability that checks drawn by the new borrowers would fall into the hands of other depositors of the same bank. Such banks would be less likely to lose cash as the result of lending and thus more able to enjoy some degree of multiple expansion on the basis of new reserves. The existence of far-flung branch banking systems would be particularly conducive, therefore, to multiple expansion within themselves. Such banks would be less sensitive to an increase in the rediscount rate than would smaller unit banks. Even the unit banks might be subject to only a slight loss of cash while expanding loans if other banks were expanding loans in step or at about the same rate and at the same time. There is no statistical evidence as to whether or not commercial banks actually do expand in step during prosperity. To the extent that they do, however, a high discount rate would be of little influence, since each bank would in effect be able to make a direct multiple expansion of loans and deposits on the basis of new borrowed reserves.

3. It may also be argued that, without any direct opportunity for multiple expansion by an individual bank, it still follows that a higher discount rate will not reduce loans to customers on funds obtained by rediscounting, because in practice rediscounting costs will be absorbed by the bank and not passed on to the customer in the form of higher rates. It is argued that the cost of additional reserves obtained through rediscounting at the higher rates is only a small part of the total cost of making bank loans. Such costs include wages and salaries of employees, rent, interest paid on deposits, and the like. An increase, let us say, of 25 per cent in the cost of rediscounting (by a rise in the rate from 4 to 5 per cent) would so little affect the total costs of making loans as to be of no importance. An opposite view of the effect of an increase in the rediscount rate is that new loans will not be made unless the necessary cost of getting funds for the new loan—that is, rediscount costs—is met by the customers' rate. Thus an application of the marginal cost theory of economics would tend to make the customers' rate rise as fast as the rediscount rate and remain above it. Governor Strong took a compromise view when he held that a rediscount rate will restrict rediscounting if it is somewhat above the average cost of the bank's loanable funds although below the average rate of return on its average loans and investments.⁵ Attention should also be called

⁵ Burgess, ed., *op. cit.*, pp. 195-196. For a discussion of penalty rates, see Harris, S. E., *Twenty Years of Federal Reserve Policy*, Vol. I, Chapter 2.

to the fact that, even though banks are able to rediscount and re-lend at a profit, their position is thereby made less liquid. An expansion of rediscounts by a member bank reduces its ability to obtain accommodation later by using up its quota of borrowing privileges at the reserve bank.⁶

It is probable that banks fail to take a strict marginal cost view in deciding rates to be charged on new loans. Moreover, the wish to prevent desirable customers from seeking loans elsewhere may easily persuade the banker of the advantage of lending at rates which are unprofitable in view of current rediscount rates. An example of this is cited by Governor Strong in the case of a bank which borrowed \$15,000,000 at the reserve bank at 7 per cent while lending \$18,000,000 to a customer at 6 per cent.⁷ A substantial increase in the cost of borrowing or rediscounting may therefore be required if a member is to make appreciable changes in its customers' rates, quite irrespective of any tendency toward multiple expansion.

4. It may be argued that an increase in the rediscount rate may fail to restrict rediscounting because the inelasticity in the demand for short-time loans in times of prosperity enables commercial banks to make corresponding increases in customers' rates without discouraging customer borrowing. This argument would apply to manufacturers for whom interest on bank loans is a relatively unimportant part of costs. In times of large speculative profits it would likewise apply to stock market speculators. It may be argued, however, that traders carrying large stocks of goods on borrowed money are sensitive to changes in the bank rate, and a reduction of (or increase in) borrowing and purchase of goods on their part would exert a powerful influence upon the activity of the economic system. Although higher money rates would probably be ineffective in restricting the borrowing of both middlemen-traders and security speculators once a boom of sizable proportion is under way, it is probable that changes in money rates might be effective under more normal conditions.⁸

⁶ Hawtrey suggests a similar reluctance of banks to dispose of their liquid bills in order to expand advances to customers. *The Art of Central Banking*, p. 153, *et seq.*

⁷ Burgess, ed., *op. cit.*, p. 91.

⁸ Some transactions are certain to be marginal in profit prospects, and an increase in the cost of borrowed funds may prevent their being undertaken. Further, the member bank may reject altogether loans which would have been made with easier money rates.

There are those who are not entirely convinced that the rediscount rate may be made definitely restrictive through its effect on the cost of borrowing or rediscounting. They believe, nevertheless, that a change in the rate will influence member bank rates because it indicates the opinion in reserve bank circles regarding credit conditions.⁹

Open-market operations as an instrument of control. The open-market operations of the reserve banks, as authorized by Section 14 of the Federal Reserve Act, fall into two classes. The first class consists of purchases of bankers' acceptances, outright or under resale agreements, and short-term government securities under 15-day repurchase agreements. These have been called "involuntary" open-market purchases because the initiative is taken by the seller rather than by the reserve bank. The reserve banks in such cases stand ready to purchase all offerings at a stated rate of discount which is determined in the light of current market rates for such paper and is designed to assist in the maintenance of a market. City banks resort to the sale of bankers' acceptances to the reserve banks as a means of increasing their reserves without rediscounting.¹⁰ Because of this fact, the buying rate of the reserve banks must be fixed not alone in view of the current rate on acceptances but also in view of general credit conditions. Too low a discount rate on bankers' acceptances may largely nullify the effects of a high rediscount rate.

The second class of open-market operations is of the "voluntary" type, in which the reserve banks take the initiative. The voluntary open-market operations are confined to the purchase and sale of government securities. It is by engaging in the purchase and sale of these securities that the reserve banks may take the initiative in bringing about changes in the volume of reserve bank credit. The sale of bonds by the reserve banks reduces by that amount the reserve balances of member banks. The immediate effect of this action is to drive member banks to replenish their reserves by the sale of bankers' bills or acceptances to the reserve banks or by rediscounting. Since rediscounting and borrowing are in the end the main reliance of

⁹ Burgess, W. Randolph, *The Reserve Banks and the Money Market*, New York, Harper & Bros. (1936 revised edition), pp. 221 and 230. Burgess definitely states that the most powerful effect of the change in the rediscount rate is the psychological one.

¹⁰ *Ibid.*, pp. 172-174.

member banks, it follows that the sale of bonds by the reserve banks will cause an increase in the rediscounts of members. This in turn causes a tightening of the money market. First, it exposes member banks to a greater extent than before to the pressure of the rediscount rate. Second, and more important in the minds of many writers, borrowing as a continuous policy is considered undesirable, and banks react to forced rediscounting by raising customers' rates and generally restricting their loans and investments in an attempt to get out of debt. The reserve banks can, therefore, ease the money market by raising member bank reserves through the purchase of bonds in the open market. This increase in reserves permits members to reduce their borrowings and rediscounts. The reserve banks may expand their bondholdings to a point where member banks are out of debt and have a substantial excess of reserves. On the other hand, they may tighten the money market by selling bonds and increasing the necessity for borrowing and rediscounting.

Sentiment against continuous borrowing by banks. Federal reserve authorities place much emphasis upon the sentiment against continuous borrowing by member banks. One reason for this emphasis lies in the fact that it harmonizes with the policy that one bank should not be permitted to utilize more than its share of the rediscount facilities of its reserve bank. Another reason for the importance of the enforcement and maintenance of this sentiment arises from the fact that the genuine liquidity of the reserve banks themselves cannot be maintained unless members refrain from any continuous credit extension upon borrowed reserves. We have seen, in our discussion of eligibility requirements, that it is not so much the kind of paper offered as a basis for borrowings or rediscounts that determines the liquidity of the reserve banks as that members borrow only for short-term and for emergency needs. Finally, the sentiment against continuous borrowing may be a powerful support for the efforts of the reserve banks to control the volume of credit. It obviously makes more effective the open-market operations of the reserve banks described above. In fact, in the face of a strong enough sentiment of this kind, one might cease entirely to worry about the effectiveness of the discount rate and concentrate efforts of control upon the open-market operations. The discount rate would be unimportant if banks could be relied upon to borrow only for seasonal and emergency needs.

Burgess speaks of the tradition against continuous borrowing

as a heritage from the old national banking system.¹¹ The Federal Reserve Board has stated:

It is a generally recognized principle that reserve bank credit should not be used for profit and that continuous indebtedness at the reserve banks, except under unusual circumstances, is an abuse of reserve bank facilities. In cases where individual banks have been guilty of such abuse, the Federal reserve authorities have taken up the matter with the officers of the offending banks and have made clear to them that their reserve position should be adjusted by liquidating a part of their loan or investment account rather than through borrowing. Abuses of the privileges of the Federal reserve system, however, have not been general among member banks. The tradition against continuous borrowing is well established, and it is the policy of the Federal reserve banks to maintain it.¹²

In spite of these efforts to build up a tradition against continuous borrowing, one may question the results. Governor Strong mentions the attempts to educate the banks in the matter,¹³ yet he admits that, if borrowing at the reserve banks is profitable, members will not reduce their rediscounts when they come into possession of extra funds but will be tempted to make additional loans.¹⁴ In respect to conditions in 1925, the Federal Reserve Board said: "Under circumstances such as prevailed in the autumn of 1925, when the growth in member bank credit was largely in loans on securities, and when the growth in reserve bank credit was larger than the seasonal demand for currency, it was evident that a part of the member banks' borrowings at the reserve banks was for the purpose of building up their reserve balances."¹⁵ Later the Board said: "In consequence of the co-operation between reserve banks and member banks in working out the problems of continuous borrowers there has been a gradual decline in the number of member banks continuously in debt at the reserve banks."¹⁶ The record of continuous borrowers during the 1923 to 1926 period is shown in Table 29, below. During 1924 about 15 per cent of the total member banks were borrowing more than their capital and surplus continuously for over one month. In 1926 only 5 per cent of the member banks were so borrowing.

¹¹ *Ibid.*, p. 219.

¹² *Annual Report of the Federal Reserve Board, 1928*, p. 8.

¹³ Burgess, ed., *op. cit.*, p. 90.

¹⁴ *Ibid.*, pp. 181-182.

¹⁵ *Annual Report of the Federal Reserve Board, 1925*, p. 16.

¹⁶ *Ibid.*, 1926, p. 5.

TABLE 29

NUMBER OF MEMBER BANKS BORROWING IN EXCESS OF CAPITAL AND
SURPLUS CONTINUOUSLY FOR A MONTH OR MORE *

Year	March	June	September	December
1923 .....	...	...	543	357
1924	326	431	364	179
1925	140	218	202	133
1926	111	193	198	113

* *Annual Report of the Federal Reserve Board, 1926, p. 5.*

It remains to be seen how the tradition against continuous borrowing will fare in the face of a pronounced commodity price boom. But between January, 1925, and January, 1929, rediscounts varied inversely with changes in open-market operations and the gold supply. During the interval (1925-1929), the country lost \$353,000,000 in gold, the reserve banks disposed of \$235,000,000 in bonds, and money in circulation dropped \$15,000,000. In the face of a net loss of about \$573,000,000 in un-borrowed reserves, member banks obtained \$592,000,000 through rediscounting and \$144,000,000 through the increase in open-market purchases of bills by the reserve banks. During this four-year period, while the country was experiencing prosperity and a tremendous stock market boom, the net growth in member bank reserves was slightly less than \$200,000,000, or about 8.8 per cent. This involved a substantial increase in rediscounts in the face of an increase in rediscount rates of between 1 and 1½ per cent.

Control by changing member bank reserve requirements. Still another weapon remains for the exercise of control over the volume of member bank credit by the reserve authorities. The Board of Governors may now change the legal reserve requirements of member banks. The amount may not be less than the statutory requirements nor more than twice that amount. This authority vastly expands the power of the Board over rediscounting when pressure is to be exerted upon member banks. Like voluntary open-market operations, it enables the Board to force members to rediscount. This in turn forces the member banks to face the restrictive effect of the cost of borrowing and the tradition against it. It has the advantage over open-market operations that the Board can make the restrictions felt by all the member banks if necessary, whereas open-market operations primarily affect banks in the financial centers.

Summary. It is impossible to evaluate the importance of the several kinds of pressure which the reserve authorities can bring to bear on member banks to check secondary expansion of bank credit. As we have seen in the previous discussion, the effectiveness of any one of the controls depends largely upon the circumstances under which it is applied. The effectiveness of the rediscount rate is doubtful, particularly in the face of rapid business expansion and rising prices. The same doubt may be expressed in respect to the tradition against continuous borrowing. Probably more effective is the combination of these two controls when backed by the power of the reserve banks to deal voluntarily in the open market and the power of the Board of Governors to change member bank reserve requirements.

Effect of government fiscal policy on bank credit. A discussion of the controls over the money market would be incomplete without a consideration of the part which may be played by fiscal policies of the government. If the government finds it necessary to sell bonds to finance a deficit, and the securities issued are bought by the banks, an expansion of deposit credit results. It is possible, however, to utilize the fiscal policies of the government to control the size of bank reserves. For example, the issue of paper money by the government directly increases the volume of legal tender money and correspondingly increases bank reserves. Conversely, the retirement of such paper money reduces bank reserves. If the government wishes to reduce bank reserves, it may easily accomplish this either by levying extra taxes or by selling securities and depositing the proceeds in the Federal reserve banks. A reversal of this process would increase bank reserves, as would the shift in government deposits from the reserve banks to member banks.

In order to counteract the tendency of gold imports to increase bank reserves, the United States Treasury began in December, 1936, to purchase incoming gold out of funds obtained by the sale of Treasury bills. Before this practice was begun, gold imports were paid for by drafts on the reserve banks against deposits created by the deposit of gold certificates issued against the newly acquired gold. Such drafts, of course, came into the possession of member banks and were utilized by them to increase their reserve balances at the reserve banks. The policy of sterilizing gold imports was discontinued in 1938.

The Standards of Central Bank Policy

Central banks hold within their hands the power to influence materially the volume of bank credit. Since they are generally

supposed to be less affected by the urge to make profits than are other banks, some standard other than the profit-seeking motive must be used as a criterion for their credit policy.

Neither the writers on banking nor the proponents of central bank policy are in complete agreement as to the proper guide to follow. One attitude, that adopted by Federal reserve authorities, emerges naturally from long experience with the international gold standard. It represents that, within the limits set by the necessity of watching gold reserve ratios, the proper procedure of the central bank is one which will provide adequate credit to finance the legitimate needs of commerce and industry. To accomplish this, it is necessary only to make sound loans to finance production and trade. Thus, the solvency of the banking system is assured not only because such loans are self-liquidating, but also because they have no tendency to result in inflation, since new credit is created only to finance new production. On the other hand, loans of a speculative nature, or loans to finance fixed capital expansion, should be avoided, since they are not accompanied by a corresponding increase in goods during the life of the loan; in other words, they are not self-liquidating. The theory that soundly made loans of a self-liquidating nature cannot become the basis for an undesirable inflation is now pretty thoroughly exploded. Yet in spite of this, such a rule is wholesome from the standpoint of banking solvency under the gold standard, where quantitative control of credit is subject to little management in any particular country.¹⁷ According to this view, the central bank policy should be one of encouragement of member bank credit expansion of a strictly self-liquidating sort and discouragement of speculative and capital loans. The central bank should, therefore, rediscount only self-liquidating paper and should create cash funds for members only in amounts needed to finance trade and industry.

In opposition to those who adopt the position that qualitative standards are the correct ones are the writers who hold that since stability of business and prices cannot in fact be achieved by adherence to a mere qualitative standard, attention should be centered upon the problem of so controlling the volume of bank credit in the form of demand deposits and notes that the proper volume of purchasing power is maintained. Except in a strictly

¹⁷ For an extreme defense of this position, see Willis, H. Parker, *The Theory and Practice of Central Banking*, New York, Harper & Bros. During most of its history the Federal Reserve Board took this approach to its problems of credit policy.

short-run sense, this view is out of harmony with the requirements of the international gold standard, whose operation presupposes, among other things, a flexible volume of money. However, it seems to lend itself readily to application to the problem of central bank policy, since the volume of bank credit obviously needs to be watched. According to this view, the nature of loans, assuming that they are well secured, is unimportant. Consequently, the central bank need not concern itself about eligibility requirements. Adherents to this theory look with indifference upon the expansion of stock market loans and bond investments so long as the resulting volume of demand deposits and currency is correct. Unfortunately, there is still much uncertainty as to the correct amount of credit and the possibility of obtaining it under our present banking system regardless of the central bank credit policy which is adopted.¹⁸

The reserve ratio. Before the First World War, central bank policy seems largely to have been a reflection of the ebb and flow of the country's gold supply. The changes in the reserve ratio of the central banks were necessarily the most important consideration in determining credit policy. Any sustained loss of gold was the signal for restrictive measures, while an increase in the gold supply indicated the propriety of some expansion. Such a policy was required if an international gold standard was to function effectively.

Although central banks must respond to a loss of gold reserves, they need not react similarly to an increase in gold. But even central banks are not entirely divorced from the profit motive. They frequently pay dividends to private stockholders, and they have expenses to meet. Without abandoning their role of lenders of last resort, they may and ordinarily do expand credit when their reserves expand. Within the limits set by the reserve requirements, central banks may expand and contract their credit in order to stabilize the short-term money market. They act as a buffer to shield other banks from the effects of seasonal and accidental variations in the demand for funds. In respect to such short-time variations in the volume of credit, central banks may take the initiative and buy and sell in the open market, or they may adopt a passive attitude of standing ready to rediscount, reserving positive steps for dealing with the more fundamental changes.

¹⁸ For a good exposition of this position, see Chapter IV of Lauchlin Currie's monograph on *The Supply and Control of Money in the United States*, 1934.

Within the limits of a credit policy finally determined by the size of the gold reserves, central banks very properly may exercise pressure to restrain booms or ease the money market to encourage recovery from depression, particularly if the variations in business activity are localized. It becomes more difficult to do this when the fluctuations in business activity are world-wide.

Stabilization of business conditions. In countries where the gold standard has been abandoned, the immediate importance of gold reserves disappears, and central banks are in a position to embark upon a program of credit control based on other standards. The Federal reserve banks after the First World War were in a position, because of their excessive gold reserves, to abandon reliance upon their reserve ratio as a basis for credit policy. It is true that their refusal to permit credit expansion sufficient to utilize these excess reserves added to the difficulties experienced by the other gold-standard countries in reacquiring gold expelled during the war. Nevertheless, the reserve banks were free to adopt a standard of business stability as a basis for credit policy. Since 1933, excessive gold imports have presented a serious problem. Because these imports are largely the result of a flight of capital from European countries to the more promising opportunities of America, it is undesirable, from the standpoint of American business stability, that these imports should be allowed to become the base for an expansion of bank credit.

Stabilization of prices. Closely allied with the attempts to stabilize business conditions is the proposal that central bank policy should be pointed toward stabilization of prices. Such a standard would obviously be ill-adapted to a single gold-standard country. Only through international co-operation among central banks could any long-run attempt at price stabilization hope to be a success. However, a country using an independent paper currency might attempt such a goal. Not only is price stabilization difficult if not impossible for a single gold-standard country, but it also raises other troublesome problems. Granted the possibility of controlling the volume of credit so as to influence prices, there remains the perplexing question of what price index should be stabilized, if any; or whether prices should actually decline under some circumstances in the interest of more fundamental economic stability. These questions will be examined in a later chapter.

The Credit Policies of the Federal Reserve System

We have already examined the various instruments of credit policy which are available to the Federal Reserve System. There remain the standards of policy and the instruments of control which have actually been used.

Policy from 1914 to 1921. During the early years of the Federal Reserve System, credit policy was mainly passive. The reserve banks stood ready to assist members by rediscounting when necessary, but the need for rediscounting was largely overcome by the importation of gold from the warring countries. Between 1915 and 1918 the net excess of our gold imports was over \$1,000,000,000. Reserve banks frequently purchased bonds in the open market to increase their earning assets to a point where they might pay expenses and dividends.¹⁹

The entrance of the United States into the war brought a tremendous demand for bank credit expansion to float government bond issues, and reserve bank credit policy was shaped for the attainment of that end. Rediscount rates were maintained at low levels during the war and early postwar period. From 1917 to 1918 the rate on customers' notes (secured by government bonds) varied from 3 to 4½ per cent. The banks were encouraged to lend to customers who wished to buy government bonds beyond the capacity of their current incomes. As a result the government was able to float an enormous volume of bonds at low rates of interest. The reserve banks in turn rediscounted this war paper for members. On April 27, 1917, the total earning assets of the reserve banks were \$239,260,000. By November 29, 1918, they had grown to \$2,312,357,000. The great bulk of these assets consisted of "war paper."²⁰ The pressure to maintain low rediscount rates for the benefit of governmental fiscal needs continued until after January, 1920.²¹ These easy money conditions fed the flames of the postwar boom which collapsed so disastrously in the middle of 1920. At the peak of the boom, the reserve banks were compelled to give consideration to the adequacy of their reserves, which approached the legal minimum limits. During the ensuing period of liquidation they turned their efforts to stemming the crisis. It was not until 1922 that the reserve authorities were able to develop anything in the way of independent standards of credit policy.

¹⁹ Reed, Harold L., *The Development of Federal Reserve Policy*, Boston, Houghton Mifflin Co., 1922, p. 250.

²⁰ *Ibid.*, pp. 269, 274.

²¹ *Ibid.*, p. 301.

by a decline in the volume of bank loans for reasons that are almost identical with the reasons that cause a decline in bank loans during depression under the present fractional reserve system. These reasons are: (1) the voluntary repayment of loans by borrowers who find a continuation of their indebtedness no longer worth while in the light of current business conditions, and (2) the forced repayment of loans imposed upon borrowers by the banks. The reasons for the forced liquidation of loans imposed upon borrowers by the banks are (1) fear of borrower insolvency and (2) fear of inadequate liquidity because of threatened runs by depositors or because of threatened loss of deposits due to general depression in the territory served by the bank.

The reduction of loans by the time deposit department of the banks, whether voluntary on the part of the borrowers or forced by the banks, results in the impounding of checking or demand deposits in the form of excess unused cash reserves within the time deposit or lending departments of the banking system. These excess idle reserves exactly equal the amount of loan reduction. Such an impounding and immobilizing of demand deposits will be exactly equal to the loss of demand deposits that would have resulted from credit shrinkage under the present fractional reserve system. It is this shrinkage that the advocates of the 100 per cent money system are so anxious to avoid. There is little reason for adopting such a plan merely to introduce control over credit expansion, for an appropriate increase in the powers of the Board of Governors of the Federal Reserve System to vary member bank reserve requirements would make it possible for the reserve banks to exercise sufficient control to prevent undesirable credit expansion under the present system. Clearly, the foundation for most of the enthusiasm for 100 per cent money rests upon the hope that it will afford an effective means for avoiding monetary *shrinkage* during depressions. But, as we have seen, the 100 per cent money plan, retaining short-term loan facilities, offers no assurance against credit liquidation when business becomes depressed.

Credit liquidation during depressions could be avoided under the 100 per cent plan only if the short-term loan market were abolished, for only in this way could voluntary and forced loan liquidation be avoided. It would be insufficient, however, to prohibit short-term lending to the banks alone. If banks only were denied the privilege of short-term lending, evasions would surely multiply in the form of expanded short-term loans by finance companies and trade creditors. Here, again, cash funds would be

immobilized during depressions by loan reductions for many of the same reasons that apply to bank loans.

In evaluating the 100 per cent money proposal, therefore, the expected gains in the avoidance of credit liquidation during depressions must be weighed against the economic disadvantages of depriving business of short-term borrowing facilities. The gains are not even so great as might appear at first glance. With a strict prohibition of all short-term lending, borrowers who otherwise would have reduced their loans voluntarily would under the 100 per cent system simply hoard idle cash in time of depression. A reduction in velocity would in this case be substituted for a reduction in the volume of money. There remains, then, only the possibility that 100 per cent money may avoid *forced* liquidation of credit at the price of the loss of the short-term loan market. On the other hand, panics that cause bankers, under the present banking system, to liquidate their loans and investments are not inevitable. Deposit insurance helps greatly to prevent depositor panic. Branch banking, improved stockholders' equity, and more intelligent management would go far to avoid the important causes of banks' need for excessive liquidity during depressions.

Government Investment as an Instrument of Control

The particular weakness of the control devices available for stabilization efforts lies in the difficulty of combating acute business depression. The root of economic fluctuations appears to lie in variations in the rate of investment. Most of the proposed methods of control aim to reduce these variations by appropriate changes in the rate of interest. But such adjustments are often insufficient to promote recovery when the depression is severe, for at such times the prospective marginal productivity of capital may be zero or even negative. Because of this, it is generally agreed that monetary management alone can hardly be effective without some form of direct control over the volume of investment. This conclusion is the basis for the belief that public works are a necessary supplement to successful monetary policy in times of acute depression.

The requirements for effective use of public works. To be genuinely effective in expanding investment during depression, public works require (a) proper timing, (b) proper financing, and (c) widespread approval in the business and investing community. The need for proper timing is obvious. Plans must be ready for rapid use if falling private investment is to be offset.

At the same time, public works should be gradually terminated with the recovery of private investment. Such a program calls for long-range planning, as short-run improvisation is strewn with pitfalls.⁹

The proper financing of public works requires measures that will be certain to provide a net increase in investment. But unless one visualizes a continually rising national debt, ultimate payment by the taxpayers cannot be avoided, and the proper timing of such taxes becomes an important question. The most promising procedure is to finance part of the expenditure for public works by expanding the government debt in the form of Treasury bills and notes. This policy encourages the banks to use their excess reserves as a basis for loan and deposit expansion. Government borrowing thus tends to replace private borrowing at the banks. In addition, the issue of government bonds will induce some investment by capitalists and institutional investors who otherwise would tend to hoard their cash accumulations because of investment uncertainties. As a partial alternative to the sale of bonds, the government might impose heavier taxes upon large incomes from which arise heavy accumulations of idle savings during depressions. This, however, might have undesirable psychological results. The expansion of the government debt during depressions calls for its retirement during better times. Here, again, the timing problem may be a difficult one.

Of quite a different sort is the problem that would attend the use of public works or government investment as a means of counteracting chronic depression. Some economists believe that the approach of "economic maturity" of the capitalistic system inevitably leads to a condition of chronic depression owing to the continued lag in private investment. This view suggests that a return to anything like continued prosperity will require a constant expansion of government investment to fill the gap left by the decline of private investment and the continued high propensity to save.

Finally, the success of public works in promoting recovery depends largely upon the approval of the business community. If businessmen believe that public works will be beneficial to business, they will respond favorably, and in turn will expand their own investments. On the other hand, private investment will

⁹ Cf. Gayer, Arthur P., *Monetary Policy and Economic Stabilization*, New York, The Macmillan Co., 1935, pp. 217-219.

not be stimulated if businessmen generally look upon public works as the height of folly. Indeed, under such circumstances, private investment may well fall below the level that would have been maintained in the absence of public works.

Composite Commodity Units as the Basis for Paper Currency

The idea that paper money might well be based upon commodities other than gold is by no means a new one. During depressions, businessmen frequently feel an acute need for funds that are not for the time being readily available through the normal credit channels. At such times, the idea of coining commodities into money has a special appeal. Proposals to create money upon the basis of stored commodities, however, have generally been looked upon as inflationary and contrary to the best interests of monetary stability.¹⁰ But an interesting proposal to use commodities as a basis of currency issues has been advanced that is designed to provide and to insure stability of commodity prices.¹¹

A stable money based on commodities. A dollar that will have a constant purchasing power over commodities is the goal of all stable money plans. What could be more reasonable, therefore, than to insure this constancy by providing that dollars be made interchangeable with a given volume of commodities? To do this would require the establishment of composite units comprised of staple, storable, primary commodities in their proper proportions. The dollar value of such units would be fixed in accordance with the total value of the commodities included in them, at prices of the date chosen for beginning stabilization efforts. At any time, holders of dollars could convert them at this fixed rate into units of commodities. Likewise, any holders of a unit of commodities might present warehouse receipts for the same to the monetary authority and receive paper dollars in return. Such a system is believed to assure that the price level of the units of commodities used as the standard would always remain stable. If, for example, the prices of commodities making up the commodity unit tend to fall, such commodities, in the

¹⁰ For a discussion of commodity money proposals of the depression years of the early 1920's, see Foster, Wm. T., and Catchings, Waddill, *Money*, Boston, Houghton Mifflin Co., 1924, Chapter VII.

¹¹ Cf. Graham, Frank D., "The Primary Functions of Money and Their Consummation in Monetary Policy," *American Economic Review*, Supplement, March, 1940, and Graham, Benjamin, *Storage and Stability*, New York, McGraw-Hill Book Co., 1937.

proper proportions, will be put into storage and the warehouse receipts will be converted into money. On the other hand, whenever the market prices of the commodities tend to rise, these receipts will be redeemed by presenting dollars, and will be sold at the market price. Such a system would automatically lead to an expansion of currency when prices begin to fall and a decrease in the currency whenever prices start to rise.

Professor Graham believes that such a system of money would provide an automatic method of satisfying the varying degrees of liquidity preferences of the public. Whenever the demand for cash balances instead of goods increases, the public can quickly and easily satisfy its desires by converting goods into money through the money authority. Whenever liquidity preference diminishes again, the process can be reversed.

Objections to the plan. In order for such a plan to be effective in controlling general prices, it would be necessary to include in the composite commodity unit a representative sample of all of the important goods that enter the markets. This means that a sample list of staples would be insufficient, for there is no reason to expect the general price level to follow the price of such staples. If, for example, a recovery period found prices of raw-material staples rising sharply, this system would reduce the quantity of money irrespective of the behavior of general prices. But as the number of such commodities that are included in the unit is increased, the difficulties of administration become enormously magnified. The problem presented by storage, for instance, is a serious one, while the familiar difficulty of proper proportions or weights of the different commodities in the representative unit also presents itself.

Moreover, there is no reason to think that this scheme would solve the liquidity-preference problem satisfactorily. The individuals who become afflicted with an annoying attack of liquidity preference during depressions are by no means confined to merchants and dealers in merchandise. Equally if not more troublesome is the liquidity preference of investors in securities and of business firms that would normally be purchasing new equipment, machines, tools, buildings, and so forth. None of these individuals would be in a position to satisfy their liquidity preferences by the pledge of staples, so as to keep up the price of the things that they ought to buy but will not.

On the whole, therefore, it seems highly questionable if this plan would prove as effective a method of controlling the monetary supply and assuring the business community that there will

be the right volume of money as do some of the more conventional and better understood methods. In the formation of monetary policy, the acute problem centers not so much in methods of control as in the development of proper criteria for action.

CHAPTER XLIX

STANDARDS OF MONETARY AND CREDIT POLICY: QUALITATIVE STANDARDS

CREDIT policy, which is the essential part of most programs of monetary control, may be divided into two primary classes. The first emphasizes the importance of the *quality* of bank credit. The second emphasizes the importance of *quantity*. Up to about 1935, the credit policies of the Federal Reserve System were essentially qualitative in character. Since that time, a shift in the direction of quantitative standards is discernible.

The Qualitative Standard of Credit Policy

The conflict between the qualitative and quantitative standards of credit policy is not a new one. An early, clear-cut example of the difference between these views occurred in connection with the celebrated Bullion Report of 1810.

The Bullion Report. Because of temporary difficulties, the Bank of England was permitted to suspend the redemption of its notes in specie under the authority of the Restriction Act of 1797. The government was at that time waging a great war, and found freedom from monetary restrictions to its liking, and for this reason allowed the Restriction Act to remain in force. At first no noticeable depreciation of the pound developed, but by 1808-1809 depreciation had become serious enough to attract public attention. The result was the appointment of a committee by the House of Commons on February 19, 1810, to investigate the reasons why the pound had depreciated in terms of gold and foreign currencies. The report of this Committee was ordered printed on June 8, 1810.¹

The Committee had occasion, in the course of its investigation, to inquire of the managers of the Bank of England as to whether

¹ See Cannan, Edwin, *The Paper Pound of 1797-1821*, London, P. S. King & Son, 1925, pp. vii-xxii.

or not the depreciation of the gold and foreign exchange value of the pound might be due to excessive issues of inconvertible notes. In reply, the Bank of England managers insisted that the decline in the value of the pound must have been due to a rise in the value of gold because of its scarcity on the Continent of Europe. It was impossible, in their view, that the value of the pound should decline because of the issue of notes by the Bank, for it issued such notes only against "legitimate mercantile paper." It was held unnecessary that the behavior of foreign exchange rates or the price of gold bullion be consulted to determine the correctness of the volume of note issue.² The only requirement for a sound currency was that the Bank lend on self-liquidating commercial paper, to use a phrase made familiar by the rules governing the rediscount of eligible paper by the Federal reserve banks.

The Committee rejected this view expressed by the managers of the Bank of England, and branded as fallacious the idea that no excessive supply of currency could result from the discount of perfectly good bills. To quote: ³

The fallacy, upon which it is founded, lies in not distinguishing between an advance of capital to merchants, and an additional supply of currency to the general mass of circulating medium. If the advance of capital only is considered, as made to those who are ready to employ it in judicious and productive undertakings, it is evident there need be no other limit to the total amount of advances than what the means of the lender, and his prudence in the selection of borrowers may impose. But in the present situation of the Bank, intrusted as it is with the function of supplying the public with that paper currency which forms the basis of our circulation, and at the same time not subjected to the liability of converting the paper into specie, every advance which it makes of capital to the merchants in the shape of discount, becomes an addition also to the mass of circulating medium. In the first instance, when the advance is made by notes paid in discount of a bill, it is undoubtedly so much capital, so much power of making purchases, placed in the hands of the merchant who receives the notes; and if those hands are safe, the operation is so far, and in this its first step, useful and productive to the public. But as soon as the portion of circulating medium, in which the advance was thus made, performs in the hands of him to whom it was advanced this its first operation as capital, as soon as the notes are exchanged by him for some other article which is capital, they fall into the channel of circulation as so much circulating medium, and form an addition to the mass of currency. The necessary effect of every such addition to the mass, is to diminish the relative value of any given portion of that mass in exchange for commodities.

The Committee therefore rejected the notion that the depreciation of the pound could not have been caused by an excess note

² *Ibid.*, pp. 46-50.

³ *Ibid.*, p. 50.

issue by the Bank of England. It recommended that resumption of specie redemption of notes be undertaken as a means of restoring the pound to its old position. In spite of the Committee's recommendations, resumption was delayed until 1821. The rejection of the purely qualitative standard by the Committee was accompanied by a demand for a limited form of quantitative control through specie redemption. Such a quantitative standard is, of course, necessary if an international specie standard is to be maintained.

The self-liquidating commercial loan or "banking theory" of credit policy. The theory of bank credit that developed in England after the resumption of specie payments in 1821 was based upon an acceptance of the basic rule laid down in the Bullion Report. The redemption of currency in specie, plus the extension of sound commercial credit to business, came to be accepted as the proper test of credit policy. This was known as the "banking principle."⁴ Actually, this was not widely different from the theory held by the managers of the Bank of England. To the rule that credit should be issued only to sound businessmen for current purposes, the Bullion Report added the limiting feature of specie redemption.

It was not long until difficulties developed in the application of the banking principle. The occurrence of a boom in 1824-1825 and the crisis of 1826 indicated clearly that the maintenance of convertibility was insufficient to guarantee a properly regulated currency. Experiences such as this led to the development of an opposing school of thought which advocated the "currency principle."

The "currency school." Opposed to the banking principle were the members of the "currency school," who held that the limits upon currency and credit set by sound commercial loans and the conversion of currency into specie were inadequate. The banking principle was believed to lend itself to improper excesses and shortages of the currency, all of which accentuated the tendency toward booms and depressions.⁵

⁴ Ricardo lent his influence to this view. See Ricardo's *Economic Essays*, Goner ed., London, G. Bell & Sons, 1926, pp. 8-10. Writers who held that the premium on bullion, the depreciation of the exchange value of the pound, and high commodity prices were symptoms of an excessive currency issue were known as "bullionists." For a thorough survey of the economic thinking that came out of the bullionist controversies of the period, see Viner's *Studies in the Theory of International Trade*, New York, Harper & Bros., 1937, Chapters III and IV. Also see T. E. Gregory's Introduction to Took and Newmarch, *A History of Prices*, London, P. S. King & Son, republished 1928, Vol. I.

⁵ Viner, *op. cit.*, pp. 220-221.

The currency school held that a mixed currency, consisting of convertible paper notes and specie, would behave correctly only if the total volume fluctuated in absolute amounts with the import and export of specie. This principle required that the issue of paper money be made to fluctuate with changes in the quantity of specie held by the issuing banks. The Bank Act of 1844 (Peel's Act) was designed to put into operation the principles of the currency school. Except for a small uncovered issue based upon government securities, Bank of England notes were to be issued only against gold. Thus changes in the volume of notes were limited to changes in the volume of gold held by the issue department.

The experience with the application of the currency principle was disappointing. As the banking school pointed out, bank deposits also made up an important part of the currency in use. Although the currency principle insured the ability of the Bank to redeem its notes in specie, it did not protect the Bank from difficulties arising from a withdrawal of deposits, and was no substitute for careful management of the whole credit operations of the Bank. It was necessary to suspend the Bank Act three times within 25 years in order to provide sufficient currency to meet panic conditions.⁶

Modern application of the "banking theory." The "banking theory" is essentially a qualitative standard, since it holds to the view that, when limited by the test of convertibility, the creation of bank credit (both notes and deposits) cannot fail to be correct if based upon loans made for strictly short-term and legitimate business purposes. Quite naturally, it was embraced by the anti-quantity theorists in their attacks upon the quantity theory. It will be recalled that one argument made in opposition to the quantity theory denies that bank credit, soundly created, can have any direct influence upon the price level. The reason given for this belief is that short-term commercial loans give rise to bank credit required by the change in business activity. If soundly made, therefore, self-liquidating commercial loans cannot result in price inflation, because their expansion is accompanied by an additional production of goods. When business is active and goods pass readily into consumers' hands and are paid for, there is no limit to the amount of credit that can be safely granted, except that set by the offerings of goods.⁷

⁶ *Ibid.*, pp. 229-234.

⁷ Willis, H. Parker, *The Theory and Practice of Central Banking*, New York, Harper & Bros., 1936, p. 303.

One of the clearest examples of an attempt to apply the banking theory to credit control can be found in the credit policies of the Federal Reserve System. Originally it was thought that strict limitation upon the privilege of rediscounting, so that only self-liquidating paper might be purchased by the reserve banks, would automatically insure the proper use of Federal reserve credit. Practical experience, however, soon led to a partial abandonment of this policy. The reserve banks began to buy government securities in the open market as a means of supplementing their scanty income from rediscounting. Later, after the entrance of the United States into the war in 1917, expediency led to the practice of lending freely to member banks on the security of government bonds and "war paper."⁸ The experiences of the war and early postwar years clearly indicated a need for some standard that would harmonize with the practices that had developed under the pressure of war necessity. This new statement of credit policy was made in 1923. It set forth that the test of the proper quantity of bank credit should be the accommodation of commerce and industry. Credit should be freely granted so long as it was put to productive use. The criteria for determining whether or not bank credit was being put to productive use were:

1. Are goods moving smoothly from producers to consumers without speculative accumulations of inventories?
2. Is the volume of trade, production, and employment in equilibrium with the volume of consumption?

The weakness of the banking principle of credit control. A weakness in the application of the banking theory arises from the difficulty, if not the impossibility, of any individual banker's being able to draw the line on bank loans before they become inflationary.⁹ The banker should not be criticized for this. His is essentially a worm's eye view of the economic structure, and particularly is this true under the unit banking system. When business shows brisk improvement, borrowers' needs for "legitimate" loans expand. At the same time, loans appear to be more sound than ever, for improved profit prospects and rising prices constantly make for greater security for the lender. It is little

⁸ "War paper" consisted of customers' notes given to banks to obtain funds with which to purchase government bonds.

⁹ For a clear exposition of how bank credit created on the basis of commercial loans may easily become inflationary, see D. H. Robertson's *Money*, New York, Harcourt, Brace & Co., 1929, Chapter IV.

wonder, therefore, that the banker sees a constantly expanding opportunity for the making of "sound commercial loans." Not until the evidence of disequilibrium becomes more obvious will the soundness of commercial loans be questioned. In the meantime, serious inflationary forces are unleashed. The situation is in no way remedied by the free rediscounting of self-liquidating commercial paper by the central bank.¹⁰

The possibility of successful avoidance of inflationary credit expansion is somewhat better where the central bank undertakes to determine whether or not credit is being put to proper productive and non-speculative uses, for the central bank has the very material advantage of being able to view the credit situation as a whole. Yet here, too, a serious limitation arises in the difficulty of devising adequate standards for measuring the legitimate credit needs of the business community. Essentially it is the problem of avoiding financing an expansion in business activity and investment that cannot be maintained, that is, an inflationary movement. In 1923 the Federal Reserve Board believed that it had the proper formula for detecting unsound and inflationary uses of bank credit. Unfortunately this formula was based largely upon the experience of the postwar boom that terminated in 1920. This inflation, accompanied by sharply rising commodity prices, was characterized by speculative accumulations of inventories. This explains the preoccupation of the Board in 1923 with the question of whether or not goods were moving uninterruptedly from producer to consumer. The unfortunate result was that the Board was blinded to the inflationary and disturbing developments of 1923-1929, when, in the face of fairly stable prices, falling industrial costs led to high business profits and an excessive rate of capital expansion based upon expanding bank credit.

It is evident that attempts to formulate adequate standards of credit policy based upon qualitative considerations are beset with difficulties of great magnitude. This explains the interest in quantitative standards displayed by most present-day students of monetary problems.

¹⁰ Cf. Currie, Lauchlin, *The Supply and Control of Money in the United States*, Cambridge, Harvard University Press, 1934, Chapter IV; and Williams, J. H., "Monetary Stability and the Gold Standard," in *Gold and Monetary Stabilization*, Chicago, University of Chicago Press, 1932.

CHAPTER L

QUANTITATIVE STANDARDS OF CREDIT POLICY

QUANTITATIVE standards for monetary and credit control are now generally accepted by advocates of monetary management. They have the advantage of a certain definiteness lacking in qualitative standards and, in addition, have the full authority of the quantity theory of money behind them. The basic assumptions that underlie all proposed quantitative standards are:

1. Control over the volume of money and bank credit can be achieved by existing or proposed devices.
2. The general level of prices can be brought under control by appropriate variations in the quantity of money and credit.
3. The elimination of cyclical fluctuations in business activity is a desirable social program.
4. The introduction of control over the price level will reduce the magnitude and violence of cyclical fluctuations by eliminating monetary factors that contribute to windfall gains and losses.

The validity of the first three assumptions need not occupy us here. Both the relation of the quantity of money to prices and the available instruments of monetary and credit control have already been examined. The desirability of a reduction in the intensity of business fluctuations is generally admitted. The last assumption, that monetary control over the level of prices can be made to contribute to business stability, remains for consideration. To what extent and in what manner can control of the price level be used in the interest of economic stabilization?

The Choice of Price Levels

The first step in introducing monetary control over the price level is to decide the important question of what index of prices

should be used as a criterion. It is well known that a substantial cyclical and secular divergence occurs among the several index numbers of prices. The index of wholesale prices responds more quickly to cyclical changes than do retail and cost of living index numbers. In turn, the price movements of certain "sensitive" commodities are much more rapid and violent than the price movements of wholesale commodities in general. Finally, an index of general prices, such as that constructed by Snyder, is the least responsive of all.

The choice of an index number to be used as a basis of stabilization efforts will depend largely upon what is considered the most urgent reason for attempting control. Thus, if the advocate of monetary stabilization is primarily concerned with the protection of the real wages of the consumer against price inflation, the cost of living index would seem to be the most desirable. On the other hand, if cyclical fluctuations are to be measured and guarded against, a price index sensitive to such changes is needed.

The cost of living index. The advantage that can be claimed for using the cost of living index as a basis for stabilizing operations arises solely from the fact that a stable cost of living would insure the consumer against losses of real wages due to the lag of money wages behind price changes. Laudable as this motive undoubtedly is, it is overshadowed by the difficulties that would attend its use. First, to assemble an accurate and representative cost of living index for the average consumer presents a difficult statistical task. Second, stabilization of incomes and business activity is a much more significant goal of credit policy than stabilization of the cost of living. Cost of living indexes are too insensitive to short-run changes to be of much aid in anticipating cyclical movements. In contrast, wholesale prices do respond readily to cyclical changes. In any event, stabilization of wholesale prices would provide sufficient stability to retail prices to meet all practical requirements.

The general price index. At first glance, one might conclude that a general index of prices, which reflects the changes in the purchasing power of money over everything that enters the market in exchange for money, ought to be a proper basis for credit policy. Such an index would include wholesale prices, wages, the cost of living, rents, transportation costs, real estate values, security prices, farm prices at the farm, and equipment and machinery prices, and would give a cross-section view of the final results of the total monetary transactions. But a comprehensive index of this sort is of slight value as an indicator

of short-run business developments.¹ The multiplicity of items largely conceals the actual movements of sensitive prices that are the significant indicators of cyclical change. Changes in the prices of securities and real estate, for example, are of little direct importance to the problem of cyclical stability. Rather, the basic problem of cyclical fluctuations deals with the changes of prices and costs of reproducible goods.

The wholesale price index. The wholesale price index as a criterion for stabilization operations has a number of distinct advantages:

1. It reflects promptly and clearly cyclical fluctuations in business activity.
2. It may be calculated quickly and on a sufficiently broad basis. This is essential to monetary control.
3. It reflects the movement of prices of internationally traded commodities. International co-operation for the purpose of stabilizing the world price level would require the use of indexes heavily weighted with international goods.

Wholesale prices, to be sure, do not furnish an infallible guide to either domestic or international stabilization. Stable wholesale prices are likely to be inflationary in a progressive economic society. As a guide to international efforts at stabilization, a wholesale price index such as that the Bureau of Labor Statistics suffers from the weakness of including commodities that are purely domestic, while those commodities which do move in international trade are improperly weighted to provide a proper measure of the international price situation. Nevertheless, the wholesale price index more nearly covers the total range of commodities that are important in the profit calculations of businessmen than does any other index of prices yet available. For this reason, proposals for monetary stabilization commonly provide for the use of the index of wholesale prices as the basis or criterion for monetary control.²

Stable Wholesale Prices as the Goal of Credit Policy

The case for stable prices is a fairly clear one. In a world of rigid costs, it is important that fluctuations in the price level be

¹For a description of Snyder's revised index of general prices, see his "The Measure of the General Price Level," *Review of Economic Statistics*, February, 1928.

²Cf. Gayer, Arthur D., *Monetary Policy and Economic Stabilization*, New York, The Macmillan Co., 1935, Chapter XII; Hawtrey, R. G., *The Art of Central Banking*, New York, Longmans, Green & Co., 1932, Chapter V.

avoided if stable business is to be achieved. For, if prices rise, windfall profits encourage a rate of expansion of capital investment that cannot be maintained and that leads to an inevitable reaction. Falling prices, on the other hand, lead to losses, a falling off in economic activity, and unemployment. Thus, in a search for the basis of economic stability, a stable price level seems to hold the most promise. Moreover, from the standpoint of debtors and creditors, stable prices seem to offer substantial justice.

Some objections to stable wholesale prices. Primarily, the objection to stable wholesale prices rests upon the important fact that modern economic society is dynamic in nature. In the past, rapid technical progress has resulted in a constant decline in the real costs of production. Since it is to be expected that technical progress is by no means ended, it must be taken into account in proposals for economic stabilization. But stable prices in the face of declining costs present difficulties. First, so far as debtors and creditors are concerned, stable prices would permit the debtors to appropriate the benefits of economic improvements at the expense of the creditors. To be sure, this may be of slight importance in view of the fact that creditors comprise the inactive side of the lending transaction. One may hold that the benefits of improvements should go to the debtors, since, being businessmen, they are more responsible for the introduction of the new techniques than are the creditors. A similar argument, based upon the equities of the situation, criticizes stable prices in the face of falling costs as tending to deprive wage earners of complete participation in the gains because of the lag in money wages.

TABLE 78

INDEXES OF PRICES, BUSINESS PROFITS, LABOR COSTS, AND OUTPUT OF CAPITAL
EQUIPMENT IN THE UNITED STATES, 1922-1929*
(1923-25 = 100)

	Wholesale Prices	Profits of 10% Corporations	Payrolls ÷ Production	Output of Capital Equipment
1922.....	96.0	81	95.4	81
1923.....	99.9	90	101.7	102
1924.....	97.4	109	101.4	91
1925.....	102.7	101	97.1	107
1926.....	99.3	128	96.7	120
1927.....	94.7	152	96.1	116
1928.....	96.0	186	91.9	118
1929.....	94.6	232	90.7	138

* Barger, Harold, "The Banks and the Stock Market," *Journal of Political Economy*, December, 1935, p. 772. Quoted by permission of the University of Chicago Press.

The inflationary effects of stable prices. Of still more significance, however, is the inflationary effect of stable prices in a period of rapidly falling costs. Money costs decline while efficiency is growing because of the well-recognized failure of the money rate of wages and interest to rise in proportion to the growth of efficiency. Stable prices in a period of falling money costs, therefore, tend to lead to excessive profits, which in turn lead to overexpansion and subsequent depression. The overexpansion and collapse that occurred in the United States during the 1920's is commonly explained upon these grounds. Table 78, on page 783, presents some evidence in support of this view.

Stable prices and equality of savings and investment. Advocates of a stable price level sometimes hold that it would automatically avoid both forced saving and a wastage of voluntary saving by permitting and requiring that voluntary money savings equal investment. The banking system would merely operate to convert voluntary savings into real capital. But in an expanding economic society, this would not be true. The growth of production, because of both a larger population and greater efficiency, requires some expansion of the means of payment if stable prices are to be maintained.

The expansion in the volume of money sufficient to provide stable prices in a growing and improving economy would require a rate of interest low enough to induce the rate of investment to rise somewhat above the rate of saving. This is necessary because an expansion of money under the conventional banking system occurs only when business finds it profitable to expand capital by borrowing at the banks.³ But this low interest rate may easily lead to an upswing of business that eventually must be reversed. The failure of money costs of production to rise with the growth in efficiency provides an impetus to inflation already described.⁴

Slowly rising prices. Impressed by the obvious fact that rising prices give encouragement to business, some have advocated a policy of gently rising prices as a cure for unemployment and depression. The windfall profits that would be relied upon to

³ Either business must expand direct borrowing at the banks or the banks must expand their security holdings.

⁴ Cf. Durbin, E. F. M., *The Problem of Credit Policy*, New York, John Wiley & Sons, 1935, pp. 112-120. Durbin suggests that a stable price policy might be shorn of its inflationary tendencies if the required monetary expansion were brought about by placing the appropriate new money directly into the consumers' hands and at the same time forbidding commercial banks to expand loans and deposits. *Ibid.*, pp. 128-135.

provide the stimulus to business activity depend, of course, upon the tendency of wages and other costs to lag behind the rising prices. Yet this need not be objectionable to the wage earner, for he would gain in fuller employment more than he would lose by a lagging wage rate. Such a policy could hardly be expected to provide the economic millennium, however, for it would almost certainly be accompanied by an overexpansion in investment and inflation that inevitably are followed by a collapse. Far from providing protection from business fluctuations and unemployment, a rising price policy would be certain to make matters worse.

Slowly falling prices. Because money costs of production are "sticky" and can be forced down only through depression, falling prices are quite generally viewed as the arch-enemy of economic stability and well-being. Nevertheless, some reasons can be given in favor of falling prices.

First, in contrast to rising prices, which reward the speculative businessman and shield the inefficient from the fruits of his errors, falling prices require high-grade managerial performance for business survival. From the standpoint of public welfare, this is a desirable result. Second, if prices do not fall so rapidly as to unduly depress business activity, the distribution of income is improved because of the increased share that tends to go to wage earners.⁵ Third, slowly falling prices provide an escape from the inflationary effect of stable prices in an advancing economic society.

Neutral Money

To some writers, the ideal money is one that in no way introduces any monetary influences into the economic situation. In other words, money should exercise neither an inflationary nor a deflationary influence on business activity. Such a money would be "neutral." The achievement of this ideal would eliminate one important cause of business fluctuations and bring the goal of economic stability that much nearer to attainment. This does not mean that a neutral money would entirely eliminate business fluctuations, for nonmonetary factors would remain.⁶

⁵ Cf. Marshall, Alfred, *Official Papers*, London, Macmillan and Company, Ltd., 1926, p. 9.

⁶ For an examination of the question of whether or not neutral money would entirely eliminate cyclical fluctuations, see Harold Barger's "Neutral Money and the Trade Cycle," *Economica*, November, 1935, pp. 436-440.

The requirements for a neutral money. What monetary system would satisfy the requirements of a neutral money? Advocates of stable prices generally regard their monetary policy as a correct one. They hold that stable prices will prevent monetary forces from operating to cause business fluctuations. But to the advocates of neutral money, this belief is erroneous and, when accepted dogmatically, lies "at the root of most of the shortcomings of present-day monetary theory" and is a bar to almost all further progress.⁷ Because economic fluctuations involve inequality of saving and investment, the true test of a neutral money is sometimes believed to be one under which saving and investment are equal. To equalize saving and investment requires the maintenance of the rate of interest at its natural or equilibrium point. Banks must lend neither more nor less than is deposited with them as savings and must not change the volume of currency and demand deposits. To permit banks to expand the volume of money would require an excess of investment over saving, with a resultant disturbance to equilibrium.⁸

But the idea that neutral money requires a fixed volume of money must not be taken too literally. There are circumstances that call for a change in the volume of money if the neutral money goal is to be achieved. For example, if the volume of money were fixed, a change in the structure of industry that reduced the money required in the industrial circulation would tend to be inflationary. On the other hand, a change that increased the money needed for industrial circulation would be deflationary, since money available for consumers' income would have to be reduced to provide the required increase in industrial cash balances.⁹ Therefore, any economic change that causes a change in the circuit velocity of money requires offsetting changes in the volume of money if it is to remain neutral. Improvements in industrial technique leading to greater productive efficiency tend to require an elaboration and lengthening of the productive process. To the extent that this increases the demand for money to handle the expanded industrial process, neutral money ought to expand also. Otherwise, the proportion of the total money supply that will flow into consumers' hands will be reduced and

⁷ Hayek, F. A., *Prices and Production*, London, G. Routledge and Sons, Ltd., 1931, p. 25.

⁸ *Ibid.*, pp. 89-92.

⁹ On this point, see Hayek, *op. cit.*, pp. 101-106, and Durbin, *op. cit.*, pp. 120-128.

prices will have to fall *faster* than justified by the fall in costs.¹⁰

Neutral money and a growing population. Still another troublesome question concerns the changes in output arising from the growth of population. Clearly, if the growth of population results in an expansion in total output, a fixed quantity of money would cause a deflationary and entirely unwarranted fall in the level of prices, one in no way related to a fall in real costs. The cash requirements for industrial circulation will be increased as the whole scale of output grows. At the same time, the number of persons requiring income cash balances will increase. A fixed supply of money under these circumstances must result in a fall in prices sufficient to enable the fixed quantity to care for the increased requirements.¹¹

Finally, the concept of neutral money necessarily involves the total amount of money payments made during a period of time, (that is, MV). The actual volume of money must, therefore, be adjusted to offset changes in velocity arising from hoarding and dishoarding of cash balances.

One may conclude that the ideal of neutral money is most nearly fulfilled by a monetary system in which the quantity of money is allowed to vary only to offset (1) changes in circuit velocity due to changes in the productive processes, (2) changes in the volume of production arising from a growth of population, and (3) changes in the velocity of money due to hoarding and dishoarding. Under such an arrangement, the result would be to stabilize per capita money incomes. This appears to be a more desirable theoretical goal than either a fixed supply of money or stable prices.¹²

Neutral money policy not suitable for a country on an international currency system. Professor Hayek, one of the leading advocates of neutral money, holds that it is not suitable for application to a single country but, instead, is appropriate only for the closed economy of the whole world. He holds that it is desirable that the volume of money within any particular geographical area should fluctuate with changes in production within

¹⁰ Cf. Barger, *op. cit.*, pp. 433-434, and Gayer, *op. cit.*, pp. 241-243.

¹¹ Durbin suggests that if the growth of population is combined with a constant supply of capital, the resulting reduction in capital per head will tend to reduce the number of stages through which output must pass during the production process. Thus, taken alone, a growth in population would tend to increase the proportion of consumers' income to the total circulation. This would be a factor tending to offset somewhat the deflationary effects. Durbin, *op. cit.*, pp. 153-159.

¹² Cf. Durbin, *op. cit.*, pp. 120-129.

that area. Only in this way can each community's share in the products of the rest of the world be properly adjusted. This would not require an absolute increase in the money supply of the whole closed economy of the world, but merely a variation in the "relative local distribution" of money between the different areas.¹⁸ This particular criticism of neutral money does not impress most advocates of monetary management, who prefer an independent rather than an international currency system. With an independent currency system, changes in the quantity of money within any particular country are not required in order to bring about appropriate changes in that country's command over world goods, for the balance of payments is equalized by shifts in the foreign exchange rates.

The objection to fixed money incomes. We have already seen that neutral money in its most effective form would aim at the stabilization of money incomes. Such a system would surely meet with formidable objections in labor circles. It is difficult to persuade an individual of the advantages of receiving the benefits of industrial progress solely through the medium of lower prices. Labor, along with other recipients of money incomes, is much impressed with the importance of an expanding money income. It is not hard to see why this is so. The success of any individual or group of individuals in improving their relative position in the economic system normally requires some increase in money income. A monetary system that lessens the opportunity to strive for a higher money income is, therefore, certain to be viewed with suspicion if not with outright disfavor. A neutral money system would require that trade union pressure for higher wages be stoutly resisted, for increased money wages would have to represent only increases in the proportion of the total national income that labor receives. The serious preoccupation of labor with the size of its money income furnishes a strong practical reason for a preference for stable prices, with wages rising with technical advance, rather than neutral money with its stable money income requirements. In contrast, a stable price level not only permits a general rise in wages as efficiency of production is increased, but also it avoids the painful necessity of cutting piece rates with improvements in efficiency. Further, stable prices with rising money wages avoids the need for absolute reductions in money wages of the less efficient workers.

The criteria for administering a neutral money. Another serious objection to any practical application of the neutral

¹⁸ Hayek, *Prices and Production*, pp. 93-95; 108-109.

money theory is found in the difficulty of setting up workable criteria for determining the proper quantity of money. One escape from this troublesome problem is the adoption of a fixed-quantity-of-money policy. But we have already seen that such a policy is certain to have undesirable deflationary effects. Clearly, there is no readily available measure of the rate of technical progress from which one might calculate the proper rate of decline of the price level required for a stable-income neutral money. Nor is there any easy way to determine the changes in the quantity of money that would be required to offset increases in population and changes in the monetary requirements of the industrial system arising from changes in productive technique. Even changes in velocity due to hoarding and dishoarding are difficult to measure promptly enough to furnish a guide to monetary policy.¹⁴ In these respects, the policy of stable prices, in contrast to stable incomes, has distinct advantages.

Deflationary effects of neutral money due to monopoly and unequal rates of economic improvements. Another criticism of neutral money is based upon the existence of monopolies and unequal rates of economic improvements within the industrial system. If the criterion used to regulate a neutral money system is a declining index of prices that corresponds to the average fall in costs, there is danger that some industries would be unduly depressed. The large number of products that are sold in markets that are less than purely competitive would create a problem because of the tendency of prices of such goods to respond belatedly to a decline in cost. Therefore, any attempt to drive down the *average* level of prices by an amount corresponding to the average decline in costs must result in undue pressure upon the prices of the nonmonopolized products. Only in this manner could the price index be depressed by the amount required to correspond with the growth of productive efficiency. A similar result would occur if, as is almost certain to happen, technical efficiency increased at unequal rates in different industries. Here, again, the imposition of a falling price level, corresponding to the average fall in costs, would unduly depress prices in industries that have enjoyed a less than average growth in efficiency. At the same time, industries whose efficiency is growing at a rate above the average would be somewhat inflated.

The above criticism does not apply seriously, however, to a neutral money whose quantity is permitted to increase only by

¹⁴ For an interesting attempt to set up a basic design for measuring the monetary factors involved in a neutral money, see Durbin, *op. cit.*, Chapter VI.

an amount needed to offset population and velocity changes. Because under such a criterion of neutral money the level of prices would be disregarded, no undue pressure need be felt by nonmonopolized prices or by prices of goods produced in industries having a less than average rate of growth in efficiency.

Finally, a neutral money designed to provide a constant level of money incomes possesses a serious theoretical and practical defect in an economy in which economic improvements take such a form that the real marginal productivity of capital advances somewhat faster than the real marginal utility of labor. In such a case, although labor's income would be expanding absolutely, its relative share in the total economic output would be declining. Under these circumstances, wage rates would have to be forced down in order to adhere to the constant per capita income principle. Resistance to wage rate decrease would promote a secular upward trend in unemployment.¹⁵

Constant Per Capita Money Income versus Stable Prices

The choice of monetary policy would seem to lie between neutral money, of the sort that will provide stable per capita money incomes, and stable prices. The theoretical requirements for economic stability appear to be most nearly met by neutral money. But as a practical matter, it leaves much to be desired. On the other hand, stable prices have much to be said for them from the standpoint of practical application. In making a choice in such a matter as this, theoretical perfection must sometimes be sacrificed to practical considerations.

One of the strongest reasons for preferring stable prices instead of the falling prices of neutral money is the relatively greater ease of setting up a criterion for establishing stable prices. Another powerful reason exists in the strong sentiment in favor of rising money incomes. Such sentiments cannot be airily disregarded in proposed plans for monetary management, since public opinion must be taken into account. When it comes to an actual choice of policy, the preference would seem to lie with stable prices in spite of the well-known limitations of such a policy. The practical advantages of stable prices promise to exceed those of neutral money by a considerable margin.

The avoidance of inflation under stable prices. In spite of its shortcomings, a stable price policy would be no little improvement over highly unstable prices, for any resulting reduction in

¹⁵ Durbin, *op. cit.*, pp. 159-161.

the amplitude of business fluctuations would be a substantial economic gain. The value of stable prices would be still further enhanced in case their inflationary tendencies in an advancing economic society could be avoided. What, we may ask, are the possibilities in this direction?

Because the inflationary effect of stable prices arises from the lag in the rewards of factors of production in the face of increasing productive efficiency, an obvious cure would involve an appropriate increase in such rewards. The action of trade unions might be utilized to bring about rising wages. Unionization could be encouraged. But such a method of insuring against the appearance of windfall profits would be unreliable and unsatisfactory. As an alternative, some automatic increase in wage levels might be provided for as the average efficiency increased. There seems to be no very good way to provide increased incomes for creditors and other recipients of fixed incomes. Any plan to increase wages and other money incomes involves the dual difficulties of measuring the rate of increase in efficiency and avoiding undue deflationary pressure upon business firms not enjoying an improvement in efficiency.

A more promising suggestion for avoiding overinvestment and boom under stable prices is Durbin's proposal that the expansion in the quantity of money required to provide stable prices in a growing economy be made available by the issue of currency to consumers by the government.¹⁶ But with falling money costs and stable market prices, the injection of new money into consumers' pockets will result in excessive business profits during the time taken for wages and other costs to rise. If credit expansion were then readily available through the commercial banks, an inflationary and self-reversing expansion in capital investment would be likely to develop. In order to avoid this possible cumulative inflation, the commercial banks would have to be prevented from making any further expansion in currency and credit by a careful limitation upon the reserves made available to the banking system by the central bank.

The short-period aspect of price stabilization. In entering upon any general program of price stabilization, there arises the problem of the manner in which the monetary authorities are to exercise their powers. For example, shall they maintain a somewhat loose type of control aimed at preventing the development of any dangerous cyclical price movements while allowing some

¹⁶ Durbin, *op. cit.*, pp. 232-237.

short-run flexibility in the price level, or should they strive to impose a tight form of supervision with the aim of preserving, so far as possible, an absolutely stable level of short-run prices?

Practical attempts at price stabilization must involve the use of some selected index of prices. When this index shows signs of fluctuation, the monetary authority must take proper counter-acting measures. But attempts to counteract every short-time change in the price level would be certain to prove both difficult and undesirable. In the first place, because of the inaccuracy of index numbers, it would be inappropriate to put the monetary controls into operation merely because of a small movement of the price index. Not until the movement reached some significant proportions should counteracting monetary operations be introduced. Nor are the instruments of control available to the monetary authority sufficiently precise to justify attempts to correct small price movements. Any price stabilization plan, therefore, seems to call for a margin of tolerance within which movements of the selected price index might be viewed with equanimity.

Further, circumstances may easily arise that would make the rigid imposition of a stable price index a highly undesirable short-run policy. This may be illustrated by assuming that unfavorable grain weather has resulted in a short crop. The price of grain will rise, and with it the index of prices. If corrective action were to be taken to prevent or check such an increase in the price index, it would involve the deflation of other prices. Clearly, such action would be an outright injury to business stability, for it would impose a general business deflation upon the community in order that the precious stability of the price index might be preserved. Similarly, a bountiful crop would lead to lower grain prices and a fall in the price index. To introduce inflationary measures designed to raise other prices sufficiently to bring the average back up to the level agreed upon would also be highly undesirable. For this reason, it is important that price movements originating in such accidental and short-run occurrences be disregarded by a monetary authority bent upon price stabilization.¹⁷

Because of the need for a margin of tolerance in connection with price stabilization, it becomes all the more necessary that

¹⁷ Cf. Mahr, Alexander, *Monetary Stability*, Chicago, University of Chicago Press, 1933 (Public Policy Pamphlet No. 9), pp. 9-12. Also see Gayer, *op. cit.*, pp. 243-245.

some effective means be available to the monetary authority by which it may judge the nature of economic developments. It must be in a position to judge, for example, whether or not a particular movement in the price index is due to an underlying inflationary or deflationary development. Promptness of action is essential, but it must be based upon sound knowledge. If neither a strictly fixed supply of money nor a strictly stable price level is desirable, there immediately arises the need for full knowledge of underlying conditions upon which judgments may be used. In such a case, a price index alone is no substitute for broad knowledge.¹⁸

Summary of the Problem of Monetary Policy

The elimination of fluctuations in business activity is the central goal of modern monetary and credit policy. Although price movements may have undesirable results upon the distribution of national income, it is their adverse effect upon the *size* of the national income that commands the primary attention of students of monetary problems. In the light of this central goal, several basic questions are presented. First, are there available adequate instruments of control to enable those in charge of monetary and credit policies to put any given policy into effect? Second, what criteria are best suited to guide the authorities in the execution of the agreed upon policy? Third, what monetary policy offers the best possibility of making a genuine contribution to the solution of the problem of business instability?

In answer to the first question, it seems entirely possible that the needed control over money and credit can be exercised within the general framework of our present banking system. Particularly would this be true if the powers of the Federal Reserve System over reserve requirements were expanded and if an independent currency system were adopted. Under these circumstances, central bank policy might easily be made effective in limiting the expansion phase of cyclical price movements. If this plan were coupled with a determined policy of government investment during depressions, it should be possible to prevent the operation of purely monetary and banking forces tending to accentuate the decline. There seems to be no real necessity for

¹⁸ For an opposite view, see Henry Simons' "Rules *versus* Authorities in Monetary Policy," *Journal of Political Economy*, February, 1936. Simons holds that the control of monetary policy should be removed from dependence upon the current judgment of those in charge and instead be determined by a rigid and unvarying rule.

introducing such an arrangement as that proposed by the advocates of 100 per cent money in order that the required controls may be achieved.

As to the proper criteria for the administration of a credit policy, it is inevitable that some price index be given central place. Because the business community is most dependent upon the behavior of wholesale prices for its well-being, the stabilization and control of wholesale prices promises more beneficial results than stabilization of retail prices, costs of living, or general prices. The relatively greater sensitiveness of wholesale prices to cyclical developments is another point in favor of their stabilization.

The choice of monetary policy that promises the greatest contribution to economic stability lies between a neutral money of the kind that would provide for constant per capita money incomes, and stable wholesale prices. In theory, much can be said for a neutral money policy that would allow prices to fall in proportion to the growth in industrial efficiency. The basic argument for neutral money rests upon the lag of money costs of production behind the growth in efficiency. Were this lag avoidable, there would be little argument for neutral money. An added argument is found in the disturbing effects upon economic equilibrium that arise from the constantly increasing money supply required to provide stable prices in a world where output is expanding. To induce the credit expansion required to provide the increase in money and credit, the interest rate must be held below the point where saving and investment are equal. The inflationary result tends to be self-reversing in character and therefore would be a source of instability.

But in practice, a neutral money policy requiring stable per capita money incomes would present serious difficulties. It would prove irritating to labor because it would run counter to the firmly established human bias in favor of rising money wages. The adjustment of wages between the more and the less efficient laborers would become more difficult. The discovery of competent measuring devices for use as a guide to a neutral money policy promises to be almost impossible. In contrast, a stable price level offers definite advantages. Money wages can rise with a growth in efficiency. The wholesale price index is readily available for use in determining when to introduce measures of control. Stable prices, however, present certain difficulties. A closely followed policy of stable prices would be disturbing to stability if applied to short-run seasonal developments. A short

or a large crop will cause sharp variations in agricultural prices and will induce changes in the price index, but to impose either inflationary or deflationary pressure upon prices of other commodities in the pursuit of a stable index of wholesale prices would be entirely unwarranted under the circumstances. Some margin of tolerance for small short-run changes in the price index would be required. This, in turn, calls for the exercise of intelligent judgment by the monetary authority in timing the application of controls. Moreover, the inflationary character of stable prices when efficiency is growing cannot be disregarded. Provision for hastening the rise in the rewards of the factors of production in the face of growing efficiency must be provided. There is the possibility that reliance upon government action to expand the currency appropriately and with a strict limitation on the expansion powers of the commercial banks might avoid the danger of the development of a cumulative inflation movement.

Finally, it must be recognized that causes other than monetary ones contribute to economic instability. The most that one can hope for from successful monetary management is the removal of the cumulative expansion and contraction of business activity that are either imposed or facilitated by monetary and credit forces. To achieve this much would, indeed, be a very substantial gain.

INDEX

A

- Acceptability of paper for rediscount, 275
- Acceptance dealers, 437-439
- Acceptance market, 437
- Acceptances:
 - bankers':
 - borrowing with use of, 212-213
 - bought under repurchase agreement by reserve banks, 438
 - buying rate of reserve banks, 312, 379-380
 - commission charged, 217
 - dealers' profits, 217
 - domestic, 212, 217
 - eligibility for rediscount, 277
 - finance and loan bills, 370-374
 - for dollar exchange, 214, 374
 - foreign trade finance, 365, 372-373
 - for financing exports, 215-216
 - for financing imports, 215
 - importance in financing our foreign trade, 216-217
 - market for, supported by Federal reserve banks, 378-379
 - nature of, 212
 - purchase of for foreign correspondents by reserve banks, 379
 - rates on (*table*), 218
 - regulations governing, 213-214
 - reserve bank purchases under resale agreements, 312
 - use in foreign trade, 367-374
 - by British accepting banks, 346-347
 - trade, 164-167
- Accommodation paper, 168
- Account analysis, 82-85
- Administered prices, 742
- Advances by Federal reserve banks on members' collateral notes, 281-285
- Affiliates:
 - banking and nonbanking, 400-402
 - limits on loans to, 185-186
 - security company, 411

- Agricultural credit (*see* Farm credit)
- Aldrich Bill, 263
- Aldrich-Vreeland currency, 261-262
- American Bankers Association, study of guaranty of bank deposits, 97-99
- Anderson, B. M., criticism of proposed reforms of legal reserve requirements, 140
- Arbitrage, 375-376
- Automobile finance companies, 435-436
- Average balance rule, 172-173

B

- Balance of payments, 566-569
 - International price equilibrium, 568-569
 - nature of, 566-567
 - United States, 1939 (*table*), 567
- Balance of payments theory of exchange rates, 607-609
 - supported by French and German experience, 609-615
- Bank credit:
 - elasticity of, 260-261
 - need for, 227-228
 - source of, 258-259
 - expansion as a means of forced saving, 232-233
 - expansion on given volume of reserves, 220-222
 - for banking system as a whole, 221
 - for single bank, 220
 - limitation of:
 - by growth of thrift accounts, 225-226
 - by internal and external drains, 223-225
 - by required reserve ratios, 230-231
 - usages of the term, 219
 - volume:
 - contraction of, 222-223
 - factors determining, 220-231
- Bank crisis of 1933, 413-416

- Bankers' acceptances (*see also* Acceptances, bankers')
 as secondary reserve, 145-147
 volume outstanding (*table*), 147
- Bankers' balances, 88-89, 118-119, 131-133, 231, 253-257
- Bankers' bills, 361
- Bank failures:
 branch banks, 424
 causes, 416-417, 425-426
 Indiana banks (*table*), 420
 national vs. others, 421-423
 number, 413
 population per bank (*table*), 423
 relation of, to stockholders' equity, 424-425
 relation of size to, 418-420
 states with highest and lowest rates of (*table*), 423
- Banking holiday, 328, 414-415
- Bank investments (*see* Investments, bank)
- Bank money (*see* Money, bank)
- Bank note currency:
 advantages over specie, 234-235
 based on government bond collateral, 247-251, 257-258
 excessive issue of, 237-238
 importance of, before Civil War, 236-237
 need for regular presentment, 240
 preferred liabilities, 243
 redemption forced by First Bank of the United States, 240
 tax on state bank notes, 249
- Bank of Canada, 340
- Bank of England, 348-351
- Bank of France, 352-353
- Bank of State of South Carolina, 246
- Bank organization, types of, 59-60
- Bank statements, 61-64
- Bank stock:
 liability for assessment, 60-61
 preferred, sale to RFC, 61, 427-428
- Barter, problems of, 1-2, 19
- Beneficiaries of trusts, rights of, 383-384
- Bilateral clearing agreements, 633-635
- Bills of exchange:
 bankers', 361
 commercial, 360-361
 foreign, 360-363
 clean, 361
 documentary, 361
 nature of, 360
 rates of, 362-367
- Bills of lading, 160, 360
- Bimetallism, 26-27
 arguments for, 29-30
 compensatory action, 28-29
 England, 30-31
 Europe, 31
 Gresham's law and, 27-28
 United States, 31-34
- Bland-Allison Act of 1878, 33-34
- Blocked currencies, 629-636
 exploitation of creditors by use of, 632-633
- Board of Governors of the Federal Reserve System:
 annual report, 295
 members, 293-294
 powers, 294-295
 to change legal reserve requirements, 305, 315
 to define eligible paper, 277-278
 to permit national banks to exercise trust powers, 382
 to regulate interest payments on deposits, 78-80
 to regulate security loans, 186
 relation to Open Market Committee, 296
- Bond accounts:
 administration of, 198-199
 liquidity of, 193-196
- Borrowed reserves, 136-137
- Borrowers, open-market, 440-441
- Borrowers' statements, 169-171
- Branch banking:
 advantages, 405-406
 extent, 405
 failure experience, 424
 legal status, 408-410
 national banks, 408-409
 objections to, 406-407
 relation to group and chain banking, 408
 states permitting, 409
 superior management, 406, 427
 trust company service, 388
- Branches of Federal reserve banks, 293
- Breakdown of the gold standard (*see* Gold standard, breakdown)
- British Equalization Account, 618-621
- British exchange controls, 627-629
- Brokers' loans, 151-155, 431-433
- Bullionist theory of money, 557-561
 evaluation of, 560-561
- Bullion Report, 774-776
- Bureau of Labor Statistics wholesale price index, construction of, 462-464

C

- Cable transfers, 361, 363
- Call loan market, 431-432
- Call loans as secondary reserves, 144-147
- Canada's balance of international indebtedness, 593-595
- Canadian Bankers' Association, 341
- Canadian banking system, 336-343
 - bank notes, 338-339
 - Bank of Canada, 340
 - branches of chartered banks (*table*), 342
 - chartered banks, 336-339
 - investment bankers, 341
 - mortgage loan companies, 341
 - need for central bank, 339
 - regulation of banks, 340-341
- Capital-deposit ratio, 75-77
 - bank failures and, 425
 - required by bank supervisors, 76-77
- Capital exports, United States, 1923-1930 (*table*), 713
- Capital goods, postponement of purchase of, 2-3
- Capital loans:
 - commercial banks, 175
 - Federal reserve banks, 286
- Capital requirements of national banks, 60-61, 76, 248, 251
- Capital stock:
 - double liability on, 60, 248
 - Federal reserve bank, 264, 266
- Cash-balance demand for money, 480-484
- Cash-balance equations, 498-501
- Central bank credit policy, 304
 - conflict in standards, 317-318
 - effectiveness, 760
 - limitation of profit motive under, 317
 - reserve ratios as basis, 318-319
 - stabilization of business by, 319
- Central bank liabilities, as secondary standard money, 12-13
- Central banks:
 - gold exchange standard and, 47
 - instruments of monetary control, 758-759
 - relation to volume of money, 489-490
- Central reserve cities, 135, 248, 251
- Certified checks, 67-68, 82
- Chain banking, 403, 408
- Chartel theory of money, 558
- Checks, collection of:
 - drawn on out-of-town banks, 114-124
- Checks, collection of (*Cont.*):
 - float, effect upon, 118, 122
 - importance, 109-110
 - interdistrict, 115-118
 - on nonmember banks through Federal reserve banks, 115
 - through clearing house, 110-111
 - through correspondent banks, 118-120
- City correspondents, 88, 118-119
- Clearing banks, nonmember, 114
- Clearing house, 110-114
 - associations, 110
 - certificates, 111
 - checks, 260
 - clearing mechanism, 110-111
 - functions other than clearing, 111, 114
 - loan certificates, 114, 259
 - methods of settlement, 111
- Coinage laws:
 - of 1834 and 1837, 32
 - of 1873, 33
 - of 1878, 33
 - of 1900, 33
- Coinage of money:
 - free, 23
 - limited, 23-24
- Coin, United States, 14-15, 35
- Collapse of stock market, 1929, 146, 326
- Collateral for Federal reserve notes, 288-290
- Collection of nontransit items through the Federal reserve banks, 126
- Commercial banks:
 - ability to lend deposited funds, 53
 - consumer financing by, 177-178
 - economic functions:
 - apportionment of capital to best uses, 56
 - forced saving, 55-56
 - introduction of flexibility in supply of businessmen's capital, 57-58
- Commercial bills of exchange, 360-361
- Commercial loans:
 - secured by commodity collateral, 158-163
 - secured by stocks and bonds, 155-156
 - unsecured, 163-173
- Commercial paper, 144-148
- Commercial paper houses, 440-441
- Committee on Bank Reserves:
 - criticisms of existing reserve requirements, 138-139
 - proposed changes in reserve requirements, 139-140
- Commodity collateral loans, 158-163
- Compensating balances, 178-179

- Composite commodity unit plan for monetary stabilization, 771-773
 - Comptroller of the Currency, 247-248
 - classification of bank investments by, 192-193
 - definition of investment securities by, 197
 - instructions on evaluation of bond accounts, 192-193
 - Consolidations of national banks, 400
 - Continuous borrowers at banks, 205-206
 - Continuous borrowing at reserve banks, 313-315
 - Controlled exchange rates, 616-636
 - under gold standard, 616-617
 - under inconvertible paper currencies, 617-618
 - direct pressure on balance of payments, 623-629
 - blocked currencies, 629-636
 - control in England after Sept. 1, 1939, 627-629
 - control of capital exports, 626-627
 - exploitation of creditors, 632-633
 - Standstill Agreement, 630
 - exchange control funds:
 - British Equalization Account, 618-621
 - Tripartite Agreement, 622-623
 - United States Stabilization Fund, 621-622
 - official exchange rates, effects of, 635-636
 - purpose of control to:
 - block foreign creditors' claims, 618
 - provide exchange stability, 617-618
 - stimulate exports, 617
 - Co-operatives, banks for, 451
 - Corporate trustees:
 - advantages, 386-387
 - criticisms, 387
 - functions, 384-386
 - Cost of collecting checks, 83
 - Costs of depositors to bank, 83
 - Cowrie shells, 19
 - Credit contraction, 222-223
 - Credit expansion, primary and secondary, 305
 - Credit instruments (*see* Negotiable instruments)
 - Credit policy (*see* Federal reserve credit policy)
 - Crisis of 1873, 255
 - Current ratio, borrowers', 169-170
 - Customers' loans, importance of, 151
 - Cyclical fluctuations in business:
 - related to long-run price trends, 470-473
 - related to short-run price movements, 473-475
 - Cyclical price movements, cumulative nature of, 474-475
- D
- Dealers:
 - in acceptances, 348, 437-439
 - in commercial paper, 439-441
 - in Federal funds, 438
 - Debentures, Federal intermediate credit bank, 281, 449
 - Deferred credit on checks sent to Federal reserve banks, 115-117
 - Demand deposit currency, 54, 226 (*also see* Deposits, demand)
 - advantages over specie, 234-235
 - Demand for money:
 - cash-balance approach, 480-484
 - adjustment of buying power to cash balances, 481-482
 - businessmen's demand for cash balances, 483-484
 - consumers' demand for cash balances, 482-483
 - transactions approach, 477-479
 - Depositors:
 - classification, 87-88
 - liability of banks to, 81-82
 - Deposits:
 - account analysis, 82-85
 - classification for legal reserve requirements, 85-86
 - competition for, 77-79
 - creation, 80-81
 - demand:
 - as money, 13
 - definition, 86
 - distribution by economic classes (*table*), 87
 - prohibition of interest on, 78-79
 - Federal reserve bank, 15-16, 266
 - protection of, 75-77, 89-92, 93-108
 - regulation of interest on, 78-79
 - relation to stockholders' equity, 75-77
 - secured and unsecured, 88
 - segregation of thrift, 89-91
 - service charges on, 85
 - source of bank's lending power, 75
 - subject to check (*table*), 224
 - time:
 - as money, 14
 - check to credit expansion, 225-226

- Deposits (*Cont.*):
 time (*Cont.*):
 definition, 86
 interest on, 79
 regulation of withdrawals, 80
 Devaluation of the dollar, 727-731
 effect on prices, 730-731
 expected results, 729-730
 Directors of Federal reserve banks, 292-293
 Discount companies, 434
 Discount rate changes, result of gold movements:
 effect on long-term lending abroad, 585
 effect on short-term capital movements, 584-585
 effect on volume of imports, 585-586
 Distressed banks, rehabilitation of, 428-429
 Dollar:
 devaluation of, 329, 727-731
 exchange, 374
 Spanish silver, 31-32
 Double liability:
 on Federal reserve bank stock, 266
 on national bank stock, 60, 248
 Durable goods, postponement of purchase of by consumers, 3
- E
- Earning assets, classes of, 141
 Earnings and losses on loans and investments (*table*), 200
 Easy money policy, development of, 326-327, 329-330
 Economic stabilization, difficulties of under gold standard, 746-748
 Effective money (*see* Money, effective)
 Eligibility, theory of, 278-280
 Eligible paper, as secondary reserve, 145-146
 Emergency:
 borrowing by members at Federal reserve banks, 282-283
 currency:
 Aldrich-Vreeland Act, 261-262
 Federal reserve bank notes as, 291-292, 415
 financing, farm credit, 446-449
 Emergency Banking Act, 415
 England:
 abandonment of gold, 1931, 716-718
 bimetallism in, 30-31
 English banking system, 343-351
 accepting banks, 346-347
 English banking system (*Cont.*):
 Bank of England, 348-351
 bank rate, 351
 condition, statement of (*table*), 349-350
 deposits, 350
 influence on money market, 350-351
 loans and investments, 350
 notes, 348-349
 open-market operations, 351
 discount market, 347-348
 joint-stock banks, 343-346
 cash reserves, 345
 deposits (*table*), 344
 loans and investments, 345-346
 number and branches, 343
 regulation, lack of, 344
 English pound, return to gold, 1925, 687-689
 Equations of exchange, 485-502
 criticisms of, 501-503
 Equilibrium interest rate and economic equilibrium, 542-544
 Equilibrium rate of interest, 533-535
 European banking crisis, 326-327
 Examination:
 branch banks, 407
 holding company groups, 404, 410
 state member banks, 294, 301
 Excess reserves:
 expansion, 329-332
 lack of, under national banking system, 254
 of Federal reserve banks, 268-269
 Exchange charges, 120-124
 Exchange depreciation, 637-653
 after 1929, reasons for, 637
 voluntary, 638-643
 behavior of wholesale prices in important countries (*chart*), 645
 competitive, 638
 depreciation of sterling, 646-648
 effect on internal price level, 639-643
 effect on prices abroad, 642
 effect on production (*table*), 652
 evaluation of results, 650-653
 extent of price adjustment, 641, 643, 649
 reasons for, 638-639
 results of, 643-653
 results of dollar devaluation, 648-650
 Exchange rates, foreign, 362-367 (*see also* Foreign exchange, rates)
 deviations from gold parities, sterling-area countries, 48

Exchange restrictions after 1929, reasons for, 624-626
 Exports, financing, 359
 External drain of specie, 224-225

F

Failed banks:

FDIC receiver for, 101, 429
 losses, 104-106
 rehabilitation, 427-429

Failures, bank (*see* Bank failures)

Farm credit:

banks for co-operatives, 451
 Federal Farm Mortgage Corporation, 448

Federal intermediate credit banks, 449

Federal land banks, 443-448
 emergency financing, 448-449
 location, 444
 purpose of loans, 445
 security for loans, 443, 445
 sources of funds, 446

Land Bank Commissioner loans, 448
 national farm loan associations, 443, 445-446

need for, 442-443
 production credit:
 associations, 450-451, 455
 corporations, 449-450

Farm Credit Administration, 451-452

Federal Advisory Council, 297

Federal Deposit Insurance Corporation, 99-108 (*see also* Guaranty of bank deposits)

assessment rate on insured banks, 100
 attempts to strengthen banking system, 106-108

borrowing power, 101

capital funds, 100

definition of interest, 79

experience, first 7 years, 104-106

income and expenditures, 105

management, 100-101

objections to size of assessment, 106
 payments to depositors of failed banks, 101

power to lend to receivers, 102

power to organize new national banks, 101

receiver of failed banks, 101, 429

regulation of interest on deposits of nonmember banks, 79

regulations of withdrawals of nonmember bank deposits, 80

statement of assets and liabilities of, 105

Federal Deposit Insurance Corporation (*Cont.*):

subrogation of, to depositors' rights against failed banks, 102
 supervisory powers, 107-108

Federal Farm Mortgage Corporation, 448

Federal funds:

borrowing of, 136-137
 dealers in, 438

Federal intermediate credit banks, 449

debentures, 281, 449

locations, 444, 449

Federal land banks, 443-448

Federal Reserve Act, origin of, 263

Federal reserve banks:

advances on member bank collateral

notes, 281-284

importance, compared with redis-

counts (*table*), 284-285

secured by eligible paper, 281-283

secured by ineligible paper, 282-284
 advances to nonmember banks, 270, 286, 415

branches:

location (*chart*), 265

management of, 293

capital, 264, 266

capital loans to industry, 286

condition (*table*), 272

contact with money market, 269-273, 304-305, 330

continuous borrowing at, 313-315

deposits, 15-16, 266

direct advances to banks, 270

direct loans to individuals, 273

directors, 292-293

excess reserves, 268

lenders of last resort, 306

liquidity:

need for, 278-279

related to temporary advances to members, 280

notes and deposits equivalent to cash to members, 287

notes of:

collateral requirements, 288, 290

redemption fund for, 289

reserve requirements, 289

open-market operations, 271, 272, 312-313 (*see also* Federal reserve credit policy)

fifteen-day repurchase agreements, 312, 379, 438

instrument of credit control, 312-313

limited to long-term bonds, 333

purchase of acceptances, 312, 379

- Federal reserve banks (*Cont.*):
 profit motive and, 267
 purchase of acceptances for foreign correspondents, 382
 rediscount rate, instrument of credit control, 308-311
 rediscounts:
 application for, 273-275
 for each other, 269
 paper eligible, 275-280
 relation to foreign exchange market, 378-380
 reserves required against deposits, 266
 suspension of, by the Board of Governors, 294-295
- Federal Reserve Board (*see* Board of Governors of Federal Reserve System)
- Federal reserve collection system, 114-117
 development, 123-125
 Interdistrict Settlement Fund, 117
 nontransit items, collection of, 126
- Federal reserve credit policy (*see also* Central bank credit policy):
 by periods:
 1914-1921, 320
 1922-1923, 321-323
 1924-1927, 324-325
 1928-1929, 325-326
 1930-1933, 326-329
 1933-1938, 329-331
 1939-1941, 332-335
 continuous borrowing, sentiment against, 313-315
 discretion, use of, 307-308
 easy money, in 1927, 324-325
 government fiscal policy, relation to, 316-318
 government gold-buying policy, relation to, 316, 331-332
 open-market operations, 312-313
 rediscount rate, 308-311
 special report to Congress, 1940, 334-335
 weapons of control, 759-760
- Federal reserve districts (*chart*), 265
- Federal reserve exchange, 126-127
- Federal Reserve System, state bank membership in, 297-303
 advantages, 300-301
 capital requirements, 297-303
 growth, 298-300, 302-303
 objections to, 301-303
- Fiduciary relations of trust companies, 381-390
- Fifteen-day repurchase agreements, 312, 379, 438
- Finance and loan bills, 370-374
- Finance companies, experience of, with automobile financing, 436
- First Bank of the United States, 240-241
- Fixed capital loans:
 growth, effects of, 210-211
 nature, 206
 objections to, 209
- Flexible exchange rates and economic stabilization, 745-746
- Forced balances:
 effect on multiple bank credit expansion, 221
 line of credit borrowers, 171-173
- Forced saving, 232-234
- Foreign banking systems, 336-358
- Foreign banking units of American banks, 377-378
- Foreign bills of exchange (*see* Bills of exchange, foreign)
- Foreign exchange:
 arbitrage, 375-376
 inland banks, sales of, 377
 market, place of Federal reserve banks in, 378-380
 merchants, 362
 rates, 362-363
 gold points, method of determining, 362-365
 under paper currencies, 365-367
 three-cornered, 376-377
- Foreign trade financing, 359-360
 American banks' share in, 216, 369
 by letters of credit (*see* Letters of credit)
- Forward exchange, 374-375
- Fractional bank reserves, criticism of, 764-765
- Free banking, 243-245
- Free gold, effect of collateral requirements of Federal reserve notes upon, 290
- French banking system:
 Bank of France, 352-353
 great credit banks, 354
- French franc:
 stabilization of, in 1926, 685-687
 undervaluation of, 687

G

- Garlock, Fred A., "Two Country Banks in Iowa and Virginia," 142-144
- General price level (*chart*), 466
 related to volume of demand deposits (*chart*), 493

- German banking system, 354-357
 giro system, 356
 private credit banks, 356-357
 Reichsbank, 355-356
- German mark, stabilization of, in 1923, 684-685
- Gold:
 export of, effect on credit policy, 326-328
 hoarding of, 415
 holdings of U. S. Treasury, 331-332
 import and export points, 363-365
 imports, sterilization of, 316, 331-332
 stability of value, 21-22
 superior qualities as money, 21-22
 supply of the United States, 14-16
- Gold Bloc abandons gold standard, 720-721
- Gold clause in contracts, repeal of, 731-732
- Gold coins, United States, 14-15
- Gold exchange standard:
 central banks and, 47
 Indian system, 42-43
 objections to, 46-47
 Philippine system, 40-42
 postwar, 44-46
- Gold movements:
 no corrective effects, 586-587
 central banks "offset," 585
 excess reserves in banking system, 585
 restore equilibrium in balance of payments, 583-584
- Gold problem, United States, 734-739
- Gold purchase plan, 1933, 726-727
- Gold Reserve Act, 1934, 36
- Gold Settlement Fund (*see* Interdistrict Settlement Fund)
- Gold shipping points, 576-577
- Gold standard, 34-39
 advantages, 37-38
 breakdown after 1929, 710-721
 England, 1931, 716-718
 environmental conditions of 1920's, 710-715
 cost and price rigidities, 713-714
 foreign lending, irregular, 712-713
 international debts, 712
 "offsetting" by central banks, 714-715
 short-term balances, 712
 European Gold Bloc, 720-721
 in raw material-producing countries, 715-716
 United States abandons gold, 719-720, 725-726
- Gold standard (*Cont.*):
 controlled exchange rates, 616-617
 countries on, exposed to world price changes, 3
 gold bullion standard, 35-36
 gold coin standard, 34-35
 resumption after First World War, 681-690
 deflation versus devaluation, 682-684
 England, 687-689
 France, 685-687
 Germany, 684-685
 objections to, 681-682
 other countries, 690
- Gold supply:
 adequacy, 691-709
 distribution of monetary stock, 1926-1931 (*table*), 707
 economies in use, 702-704
 maldistribution as cause of price decline, 704-709
 needed for long-run price stability, 692-698
 Cassel's estimate, 693-696
 Hardy and Wilcoxon's estimates, 697
 Kitchen's estimate, 696-697
 Warren and Pearson's estimate, 699-700
 shortage as cause of price decline after 1929, 698-702
- United States:
 causes of increase, 734, 736
 economic cost, 737-738
 inflationary threat, 736-738
 proposals to stop imports, 738-739
- Government fiscal operations, effect of on credit, 761
- Government fiscal policy, relation of to credit control, 316
- Government investment in public works, 769-771
- Government securities:
 as secondary reserve, 144-146
 with circulation privilege, 248, 251-252
- Graduated tax on reserve deficiency of reserve banks, 266, 269
- Greenbacks, redemption of, in 1879, 33
- Gresham's Law, 27
- Group banking (*see* Holding company banking)
- Guaranty of bank deposits, 95-108 (*see also* Federal Deposit Insurance Corporation); *experience with state systems*, 97-99

Guaranty of bank deposits (*Cont.*):
 mutual savings banks, 102-103
 original permanent plan, 99-100
 present system, 100-102
 reasons for, 96-97
 standards for judging, 93-94
 effect on functioning of banks, 96
 effect on management, 94-96
 financial burden, 97
 temporary plan, 99
 termination of insured status, 101-102
 type of deposits insured, 103
 Guinea, gold, 30

H

Hartzell, Elmer, method of for computing needed secondary reserve, 144
 Holding company banking:
 advantages, 404
 legal control, 410-411
 objections to, 404-405
 purposes, 402-403
 voting permits, 410

I

Impairment of reserves, penalty for, 136
 Income approach (*see* Theory of value of money, income approach)
 Inconvertible paper, 10-11, 24-25, 49-50
 Inconvertible paper currencies, rates of exchange on, 365-367
 Independent paper currencies:
 case for, 741-746
 economic stabilization with, 745-746
 freedom from world cyclical price changes, 756-757
 objections to, 751-757
 inflationary bias, 751-752
 long-term lending problem, 752-753
 seasonal disturbances, 755
 speculative short-term capital movement, 753-755
 Index numbers:
 aggregate type, 462-464
 base period, 460-461
 Bureau of Labor Statistics wholesale price, 457-458
 by groups of commodities, 456-457
 method of construction, 461-464
 problems of, 459-460
 India, gold hoarding by, 555
 Individual loans, limit on size of, 182-184, 248-250

Inelasticity of national banking system, 253-258
 Inflation:
 resistance to, 335
 resulting from exchange depreciation, 609-615
 France, 609-610
 Germany, 610-615
 Installment paper, bought by commercial banks, 178
 Insurance of bank deposits (*see* Federal Deposit Insurance Corporation; Guaranty of bank deposits)
 Insured mortgages as real estate loans of banks, 185
 Interdistrict Settlement Fund, 117-118, 128
 Interest-bearing debt, United States Government, 148
 Interest on deposits, regulation of, 78-79
 Interest rate:
 equilibrium, 533-535
 market, 535-539
 natural, 533, 542
 price level and, 533-551
 Interlocking directorates:
 between member banks, 411-412
 in chain banking, 408
 Intermediate credit banks, 449-450
 Intermediate credit for businessmen, 175-176
 Internal drain of currency, 223-224
 International gold standard, difficulties in, 741
 International lending and balance of payments, 596-597
 International monetary standard, economic stabilization under, 746-748
 International price relationships:
 balance of payments theory of exchange rates, 607-609
 gold standard:
 disequilibrium, causes of, 578
 disequilibrium, corrective forces of, 578-582
 from gold movements, 583-584
 short-term capital movements, 584-585
 spontaneous, 580-582, 592-593
 time required to operate, 587-591
 unilateral capital movements, 593-597
 goods moving in international trade, 569

International price relationships

(Cont.):

gold standard (Cont.):

- home-market commodities, 570-571
- in increasing-cost industries, 572
- meaning of equilibrium under, 571-572

- relation of prices of sheltered and unsheltered goods, 572-573
- unsheltered goods, 569-571

inconvertible paper currencies:

- balance of payments theory supported by experience of France and Germany, 609-615
- equilibrium rate of exchange, 598-600

- corrections of market rate, 607
- deviations from, 605-607

- exchange depreciation, cause of inflation, 609-615

France, 609-610

Germany, 610-615

- flexible exchange rates, 599-600

- overvalued currencies, 606

- purchasing power parity, 600-604

- calculation, method of, 601-602

- criticism of Cassel's method of calculation, 602-603

- deviations of market rate from calculated rate (*table*), 606

- price index suitable for calculating, 604-605

- seasonal fluctuations in exchange rates, 599-600

- undervalued currencies, 606

- price equilibrium, 568-569

International trade:

- bilateral clearing agreements, 633-635

- gold standard, settlement of debt balances under, 575-577

- resemblance to domestic trade, 565-566

Interregional trade:

- domestic, settlement of balances, 574-575

- effects of crop failure, 562-566

- effects of shifts in demand, 565

- effects of shifts in direction of capital movements, 564-565

Investment, incentives for, 511-512

Investment banking, type of financial institution, 52

Investment funds:

- demand for, 535-536

- supply of, 537-539

Investments, bank:

- administration, 198-199

- evaluation of bonds, 191-193

- legal regulation of, 195-198

- liquidity, 193-195

- losses on, 199-202

- member bank (*table*), 190

- national banks, classification of, 189

- under repurchase agreements, 195

Involuntary open-market operations,

- 312 (*see also* Federal reserve banks, open-market operations)

L

- Land Bank Commissioner, loans by, 448, 453

- Large-scale banking (*see also* Holding company banking, Chain banking, and Branch banking):

- advantages of, 397-400

- affiliated banks and companies, 400-402

- national banks, 400-401

- reasons for, 397-400

Latin Monetary Union, 31

Leakages, 522-523

Legal reserve requirements, 134-137

- classification of cities, 137

- computation method for member banks, 135-136

- deficiency, effect of, 136

- member banks, criticism of, 138-139

- reasons for, 132-134

- related to inelasticity of national banking system, 254-256

Letters of credit:

- applications for, 367-368

- financing shipments between foreign countries, 369

- import and export, 368-369

Licensing reopening of banks, 415-416

Line of credit, 171-173

Liquidity:

- Federal reserve bank:

- need for, 279-280

- related to temporary advances, 280

- of bonds, 193-194

Loan and finance bills, 370-374

Loans and discounts, 150-186

- accommodation, 168

- affiliates, loans to, 185-186

- annual clean-up, 171

- brokers', 152-153, 431-433

- by New York banks for country correspondents, 156

Loans and discounts (*Cont.*):

- classification of member banks', 153, 176-177
- collateral loan agreement, 157-158
- commercial, secured by stocks and bonds, 155-156
- commercial paper, 144-149, 439-441
- commodity collateral, 158-163
 - bills of lading, 160
 - trust receipts, 163
 - warehouse receipts, 161-162
- earnings and losses on (*table*), 200
- executive officers, loans to, 185-186, 427
- expansion of, on new reserves, 220-222
- fixed-capital, 206-211
- individual loans, limits on size of, 182-184, 248, 252
- legal regulation, 182-186
- real estate, 178-182, 184-185
- secured by banks' own stock, prohibited, 184
- secured by stocks and bonds, 152-156
- security trading, margin requirements for, 186
- self-liquidating, 204-209
- shiftable versus self-liquidating, 206-209
- short-term, 151, 174
- single-name paper, 168
- term loans, 175-177
- to continuous borrowers, 205-206
- unsecured, 163-174
- Loans and investments:
 - member banks, 154
 - percentage yields (*chart*), 201
 - relative returns on (*chart*), 188
- Loans for "others," 432-433
- Long-term interest rates, relation of to discount rate, 550
 - from failed banks, 104
 - on bond investments, 199-201

M

- Maladjustment of world's gold supply, 704-709
- Managed paper standards, 49-50
 - advantages, 50
 - objections to, 50
- Marginal efficiency of capital, 519
- Market rate of interest versus equilibrium rate, 540-542
- Market ratio, bimetallism, 26, 30

Member banks:

- borrowing on collateral notes secured by:
 - eligible paper and government bonds, 281-282
 - ineligible paper, 282-285
- deposits of member and nonmember banks (*table*), 303
- earnings and losses on loans and investments (*table*), 200
- examination by Federal reserve banks, 294, 301
- excess reserves, 138
 - chart showing, 329
 - expansion, 329-330
- legal reserve requirements, 134-136, 138-139
- loans, classification of, 151, 153
- loans and investments (*chart*), 154
- number of member and nonmember banks (*table*), 302
- rediscounts (*see* Federal reserve banks, rediscounts)
- reserve requirements (*table*), 134; (*see also* Required reserves for member banks)
 - changes affecting excess reserves (*chart*), 329
 - instrument of credit policy, 305, 315
 - separation of security companies from, 411
- Metals, monetary, 20, 22
- Mill, J. S., on demand for money, 479
- Mint ratio, bimetallism, 26, 28
- Mitchell, W. C., on changing prices and length of prosperity and depression, 470-472
- Monetary and credit standards:
 - qualitative standards of credit policy, 774-779
 - banking theory, 776-779
 - Bullion Report, 774-776
 - Currency School, 776-777
 - self-liquidating commercial loans, 776-779
 - quantitative standards of credit policy, 780-795
 - choice of price levels for stabilization, 780-782
 - constant per capita money incomes, 789-791
 - neutral money, 785-790
 - stable wholesale prices, 782-784
- Monetary management:
 - international co-operation, 748-750
 - difficulties of, 748-749
 - possible methods of, 749-750

Monetary management (*Cont.*):

- methods of, 758
- central banks, 758-761
- composite commodity units plan, 771-773
- control of foreign exchange rate, 763-764
- Fisher's stabilized dollar, 761-763
- government investment in public works, 769-771
- one hundred per cent money, 764-769

Monetary nationalism (*see also* Independent paper currencies):

- case against, 751-757
- case for, 741-746
- facilitates economic stabilization, 745-746
- increasing rigidity of prices, 742-745

Money:

- bank, 12-13
 - demand deposits, 13
 - time deposits, 14
- coinage, 23-24
- defined, 9-10
- effective, 14, 16-17
- inconvertible paper, 24-25
- medium of exchange, 1-2, 8-9
- metals used for, 20-21
- need for stable value, 7-9
- origins, 18
- primitive forms, 19-20
- standard:
 - in circulation, 12
 - other than gold, 15
 - the State and, 11-12
 - variability of, 11
- standard of deferred payments, 9
- standard of value, 7
- store of value, 8-9
- types of, in United States, 17-18
- use of, causing economic disturbances, 2-3

Money desk, New York Stock Exchange, 432

Money economy, and business cycles, 4

Money market, contact of reserve banks with, 269-273

Mortgage trust certificates, 180

Multiple expansion of bank credit, 221-222

Multiplier, the, Phase I, 520-525

leakages, effect of, 522-525

price level and, 523-524

public works and, 524-525

Multiplier, the, Phase II, 525-532

propensity to consume, 526

Mutual saving banks, insured deposits of, 102-103

N

National Banking Act, 247-251

National banking system:

difficulties under, 253-257

inelasticity, 255-257

seasonal movement of funds, 1905-1908 (*table*), 254

Treasury aid during crises, 259

National bank notes, 248-250

collateral, 257-258

called for redemption, 251

inelasticity, 257-258

limit on volume, 249-250

redemption:

agents, 248, 250

fund, 250

reserve requirements removed, 250

National banks:

branch banking, limits of, 408-410

consolidations, 400-401

double liability on stock, 60-61, 248

expanding powers, 252-253

failure experience, 421-423

individual loan limit, 182-184, 248, 252

investments, 187-189, 197-198

real estate loans, limits on, 184-185, 248, 252

reductions of required capital, 251

reserves required against deposits, 248, 253

trust department earnings, 393

trust powers, 375, 390-392

National Credit Corporation, 413

National farm loan associations, 443, 445-446

Natural interest rate, 533, 542

Negotiable instruments, 70-74

defenses against payment, 71

holders in due course, 71

indorsements, types of, 72-73

liability of parties, 73-74

material alteration, 72

presentment and notice of dishonor, 73-74

tests of negotiability, 71

types, 70

Neutral money, 765-766

New England Bank, 239

Nonearning assets, 120

Nonmember clearing banks, 114-115
 Nonpar banks, 119-120, 125
 Nontransit items, collection of, 126

O

Official rates of exchange, 618, 628, 633, 635
 One hundred per cent money, 764-769
 some criticisms of, 767-769
 time deposits and loans under, 766
 Open Market Committee, 295-297
 Open-market operations of Federal reserve banks (*see also* Federal reserve banks, open-market operations)
 effect on reserves of member banks, 271-272
 instrument of credit control, 312-313
 relation to rediscounting, 312-313
 Open-market policy, flexible portfolio of 1939, 332
 Operating ratios of member banks, classified as to size (*tables*), 398, 399
 Overdrafts, 66, 82

P

Paper money, inconvertible, 24
 Paper money exchange standard, 48-49
 Par collection:
 controversy, 124-126
 of checks:
 Federal reserve banks' efforts to establish, 124-126
 legislation to prevent, 125-126
 suits to prevent, 125
 Pegged exchange rates, 667-668
 Peso, Philippine, 40-42
 Pittman Act, 291
 Population per bank of states with good and bad failure rates, 423
 Portfolios of banks, requirements of, 203-204
 Preferred stock of national banks, 61, 427-428
 Price-control measures, 672-679
 Price-level changes:
 effects of, 465-475
 on business incomes, 469-470
 on debtors and creditors, 468-469
 on income distribution, 4-5
 on wage earners, 470
 long-run changes and prosperity and depression, 470-472

Price-level changes (*Cont.*):
 measurement of, 456
 short-run changes and effect on business activity, 473-475
 types of, 466-467

Prices:

 discount rate and, 544-551
 dispersion among individual, 463, 465-467
 falling, and business depression, 3-4
 in Canada, 1900-1913 (*table and chart*), 595
 rising, disturbances of, to business, 4
 Prices and exchange rates, during acute inflation, 610-613
 Prices and war, 654-680 (*also see* War and prices)
 Primary credit expansion, 305
 Production credit associations, 449-451
 Production credit corporations, 449-451
 Profits, windfall, 4
 Propensity to consume, 526
 Public works as method of monetary management, 769-771
 Purchasing power, shifts of, as correctives in balance of payments, 580-582
 Purchasing power parity:
 calculation, method of, 601-602
 criticism of Cassel's method, 602-603

Q

Quantity theory of money, 486-488
 applied directly to M and M' , 490-498
 central banks and, 489-490
 versus Bullionists, 557-561

R

Real estate loans, 178-181, 184-185
 advisability of making, by banks, 180-182
 amortization of, 181
 insured mortgages, 185
 mortgage trust certificates, 180
 national banks' limits on, 184-185
 Real income, per capita, related to changing price levels, 472-473
 Receivables, loans on, by discount companies, 434
 Receivers of failed banks, 101-102, 429-430
 Recognized dealers in acceptances, 438

- Redemption fund:
 for Federal reserve notes, 289
 for national bank notes, 250
- Rediscounting (*see* Federal reserve banks, rediscounts)
- Rediscount rate:
 as instrument of credit policy, 308-311
 subject to control by Board of Governors, 294
- Rediscounts of reserve banks for each other, 269
- Regulation T, on security loans by brokers, 186, 433
- Regulation U, on security loans to brokers and speculators, 186, 433
- Rehabilitation of failed and distressed banks, 427-429
- Rentenmark, 684-685
- Reopened banks, after holiday, 415-416
- Reparations, German, 610, 684
- Repurchase agreements, 312, 379, 438
- Required reserves for:
 Federal reserve banks, 266-268
 member banks, 134-135, 305, 315
 national bank notes, 248, 250
 suspension of, by Board of Governors, 294-295
- Reserve bank credit (*chart*), 327
- Reserve cities, 132, 134, 248, 251
- Reserve ratios:
 effect on expansion of bank credit, 230-231
 of Federal reserve banks, 268-269
- Resumption of gold standard (*see* Gold standard, resumption of after First World War)
- RFC:
 agricultural credit corporations, 450
 gold purchases by, 726-727
 loans to banks, 413-414
 purchase of bank stock and debentures, 415, 426-428
- Rigidity of prices, 742-745
 cause of breakdown of gold standard after 1929, 713-714
- Rising prices and economic well being, 784-785
- S
- Safety Fund System, 242-243
- Saving and investment, inequalities of, as causes of business and price changes, 510-517
- Savings, volume of, factors affecting, 526
- Savings banks, 52-53
- Seasonal movement of funds, 1905-1908, 254
- Second Bank of the United States, 241-242
- Secondary credit expansion, 305
- Secondary reserves:
 bankers' acceptances, 145, 147-149
 call loans, 145-147
 commercial paper, 144-145, 147-149
 composition, 144-146
 definition, 142
 earning rates on different types (*table*), 147
 eligible paper, 145-146
 government securities, 146-148
 size affected by behavior of deposits, 142-144
- Securities Exchange Act, 186, 433
- Security companies, separation of from banks, 411
- Security loans:
 classification, 155
 regulations of Board of Governors, 186, 433
- Security trading, loans for, 152-154
- Segregation:
 of thrift deposits, 89-92
 of trust assets, 382
- Self-liquidating loans, 204-208, 278-280, 776
- Sensitive prices versus insensitive prices, 743-744
- Service charges, 85
- Sheltered goods, 570-571
- Sherman Silver Purchase Act of 1890, 33-34
- Short-term loans, economic use of, 55-58
- Silver Purchase Act of 1934, 733-734
- Silver question, the, 732-734
- Single-name paper, 168-173
- Sovereign, British, 35
- Spanish silver dollar, 31-32
- Spontaneous correctives of disequilibrium in balance of payments, 580-582
- Stabilization Fund, 14, 621-622
- Stabilized dollar, 761-763
- Stable prices, wholesale, inflationary effect of, 783-784
- Stable prices and equality of savings and investment, 784
- Standard money, 10-11 (*also see* Money, standard)
- Standstill Agreements, 630
- State Bank of Indiana, 246

State Bank of Ohio, 246
 State banks:
 advantages over national banks, 249-252
 affiliated with national banks, 400-402
 failure experience, 421-423
 membership in Federal Reserve System, 297-303
 ratio to all banks (*table*), 252
 State member banks, regulation of investments, 197
 Sterilization of gold imports, 331-332
 Sterling-area countries, 49
 Stockholders' equity, related to bank failures, 424-425
 Stock market collapse, 1929, 146, 326
 Stop payment orders, 82
 Straight rehabilitation plan, 428-429
 Subsidiary Coinage Act of 1853, 32
 Suffolk Bank, 238-240
 Supply of capital:
 effect of commercial banks on, 53-56, 231-234
 effect of savings banks on, 52-53
 Surplus:
 Federal reserve banks, 100, 267
 national banks required to carry net profits to, 61
 required to start a national bank, 61
 Sweden, gold exclusion policy of, 668

T

Telegraphic transfers, 128
 Term loans, 175-177
 Theory of eligibility, 278-280
 Theory of value of money:
 cash-balance approach, 480-484
 equations, 498-501
 central banks, place in, 489-490
 discount rate and price level, 544-551
 Hawtrey's view, 547-548, 551
 Keynes' view, 548-551
 discount rate changes, effect of:
 on long-term interest rates, 544-550
 on marginal business undertakings, 545
 on middlemen's borrowing, 547-548
 on speculation, 545-546
 equations of exchange, criticisms of, 501-503
 gold, 552-561
 cost of production and value, 553-554
 equality of money value and bullion value, 552-553
 monetary demand for, 556-557

Theory of value of money (*Cont.*):
 gold (*Cont.*):
 monetary supply, 555
 output and changes in price level (*chart*), 553
 income approach, 504-517
 equations, 505
 Hawtrey's approach, 508-510
 income velocity (*table*), 507
 Multiplier, Phase I, 520-525
 Multiplier, Phase II, 525-530
 Multiplier and public works, 524-525
 savings and investment approach, 510-517, 514, 517
 interest rate, place of, 533-551
 quantity theory, 486-488
 applied directly to M and M' , 490-497
 Bullionist versus, 557-561
 transactions equation, 485-489
 velocity, place of:
 acute inflation and deflation, 496-498
 equality of V and T , Snyder's study on, 492-495
 equality of V and T , theoretical case for, 490-492
 Thomas Amendment of the AAA, 727-729
 Three-cornered exchange, 376-377
 Time deposits (*see* Deposits, time)
 Trade acceptances, 164-167
 abuses, 166
 advantages to banks, 165-166
 bankers' objections to, 166-167
 nature and use, 163-164
 Trade paper, 163-164
 Traders' outlay, 509-510
 Transactions approach:
 demand for money, 477-479
 equation, 485-490
 Transfer drafts, Federal reserve, 127
 Tripartite Agreement, 622-623
 Trust companies, 381-396
 advantages to banks in being, 388-389
 classification of fiduciary functions, 386
 classification of types and assets, 391
 common trust funds, 389
 concentration in trust business, 389-390
 deposit of securities with state authorities, 387
 early development, 381
 earnings, 393-394
 fees for trust services, 394-396

Trust companies (*Cont.*):

- national banks as, 390-392
- types of trusts, 384-385
- Trustees, duties and liabilities of, 382-384
- Trust receipts, 163

U

- Unitary demand for money, 478-479
- United States:
 - abandons the gold standard, 719-720, 725-726
 - bimetallism in, 31-34
 - Government interest-bearing debt, 148
 - money, 14-18
 - securities:
 - collateral for Federal reserve notes, 288, 290
 - purchase by Federal reserve banks (*see* Federal reserve banks, open-market operations)
 - stabilization fund, 621-622
 - Unspent margin, 509
 - Unused reserves, source of elasticity, 227-228, 258-259

V

- Vault cash, 132-133, 224
- Velocity of bank deposits in United States, related to volume of trade, 492, 496
- Velocity of money, income, 506-508
- Velocity of money in Germany, 1921-1923, 497
- Voting permits, holding company, 410

W

- Waiver and sale plan of bank reorganization, 429
- War and prices, 654-680
 - avoidance of price inflation, 669-677
 - draining off consumers' incomes, 669-670
 - high interest rates, 670
 - output expansion, 670-671
 - price controls, 672-679
 - movements of controlled and uncontrolled prices (*table and chart*), 675
 - 1917-1918 experience, 673-677
 - overall ceilings, 677-678
 - problems after 1940, 677-679
 - rationing, 672-673
 - selective type, 678-679
 - business inflation, 662
 - gold standard abandoned in 1914, 666-667
 - neutral countries, position of, 662-665
 - postwar price movements, 679-680
 - wholesale price movements in various countries (*table*), 622
- War finance:
 - borrowing, arguments for and against, 655-662
 - consumers, effect on, 658-659
 - inflation, usefulness of, 657-658
 - pegged exchange rates, 667-668
 - per cent taxes to total governmental expenditures, 1917-1919 (*table*), 656
 - problems of, 654-661
- Warehouse receipts, 161-163
- Wildcat banks, 238, 244-245
- Working reserves, 132-133

CHAPTER XXVII

BANK FAILURES

AN UNPRECEDENTED number of bank failures occurred in the United States during the period from 1921 to 1933. The agricultural depression, which began with the general business collapse of 1920 to 1921, continued with varying degrees of intensity down to 1929 and took a heavy toll in bank failures in agricultural areas. During the years 1921 to 1929, over 5,600 banks failed with deposits of more than \$1,700,000,000. The prolonged and acute depression which began late in 1929 brought a still greater flood of failures, this time in the industrial centers as well as in the agricultural districts. Between January 1, 1930, and March 15, 1933, 5,492 banks suspended with deposits of \$3,500,000,000. By the end of March, 1933, 5,200 banks, operating before the crisis, with deposits of over \$4,000,000,000, had not been licensed to reopen. This meant suspension of over 16,000 banks with deposits of over \$9,000,000,000 between 1921 and the end of March, 1933, not counting temporary suspensions arising directly from the bank holidays.

The banking holiday. The bank failure situation became serious in 1930 when 1,345 banks with deposits of \$864,000,000 suspended. Conditions became rapidly worse in 1931, with 2,298 failures involving \$1,691,000,000 in deposits. The banks themselves attempted to meet the difficulties by setting up, in October, 1931, the National Credit Corporation, authorized to issue up to \$1,000,000,000 in debentures which were to be sold to banks. The proceeds were to be lent to hard-pressed banks attempting to liquidate their assets in the face of runs started by such wholesale failures. It was hoped that this procedure would stem the tide for the solvent banks. The National Credit Corporation proved ineffective, however, although the number of failures declined from 522 in October to 175 in November, 1931.

On January 22, 1932, Congress passed an act authorizing the organization of the Reconstruction Finance Corporation, a gov-

ernment corporation with power to issue debentures which were sold to the Treasury, and to lend funds to distressed financial institutions, railroads, and farmers. Between February 29, 1932, when it started operations, and December 31 of that year, the RFC advanced \$4,450,000,000 to banks and trust companies. Failures declined to 121 in February and to 46 in March. Although rising to 131 in June, they declined to 67 in September. In spite of aid granted by the RFC, 242 banks failed in January and 154 in February, 1933. Weak spots in the banking system were developing rapidly as banks were subjected to increased pressure from depositors. The attempts of banks to reduce loans and to get cash put more pressure on prices and business as goods were liquidated to pay loans. The selling of securities demoralized the bond market and increased the difficulties of the banks.

The situation of the banks in Michigan became so hazardous that a holiday was declared by the governor on February 14. The closing of the Michigan banks put heavy pressure upon the banks in the surrounding territory as corporations and others sought to obtain funds by withdrawing deposits in unrestricted banks. Indiana declared a holiday on February 23, closely followed by Maryland, Arkansas, and Ohio. The holidays spread until all banking operations were virtually suspended throughout the country by March 4.¹ On Monday, March 6, 1933, the President closed all the banks by proclamation under the powers of a wartime act of October 6, 1917, which authorized the President to regulate transactions in foreign exchange and the export or hoarding of gold or silver coin or bullion.

The presidential proclamation declaring a general bank holiday became necessary in order to put a stop to bank runs and the accompanying hoarding of cash. Only by a complete suspension could the banking situation be put into shape so that public confidence might be re-established. The holiday caused an almost complete suspension of business activity as the means of payment were shut off. The proclamation originally fixed March 9 as the last day of the holiday, but the time was afterward extended. Not only was the holiday necessary if order was to be restored for member and nonmember banks, but it also served the very useful purpose of relieving a rapidly growing strain on the reserve banks. Member banks increased their rediscounts during the latter part of February and the first week in March by \$1,170,000,000, while the reserve banks bought \$460,000,000

¹ "Federal Reserve Bank of New York," *Monthly Review*, April, 1933.

in bills and securities in the open market. Between February 1 and March 4, \$305,000,000 in gold was exported, while gold in circulation (hoarded) increased \$150,000,000 during the same period. As a result, the reserves of the reserve banks in excess of the statutory requirement declined from \$1,476,000,000 to \$416,000,000, and the average reserve ratio for the twelve banks fell from 65.6 per cent to 45.3 per cent.

On March 9, 1933, Congress enacted an Emergency Banking Act which: (1) approved and confirmed the action of the President; (2) authorized the President during any period of national emergency to regulate or prohibit foreign exchange transactions, to prohibit export or hoarding of gold and silver coin, bullion, or currency; (3) authorized the Secretary of the Treasury to call in all gold coin, bullion, or certificates when in his discretion it is necessary to protect the currency; (4) authorized the appointment of a conservator for national banks in difficulties, pending final disposition of their affairs by return to full legal status or liquidation (a certain fractional part of the deposits of banks in the hands of conservators might be classified as withdrawable and a portion restricted at the discretion of the Comptroller of the Currency, while new deposits were to be segregated and held in cash or invested in government securities and to be payable on demand without restriction); (5) set up rules for the reorganization of national banks; (6) authorized national banks to issue 6 per cent cumulative preferred stock free from liability for assessment, with preference as to assets in case of liquidation, and with such voting power as is approved by the Comptroller; (7) authorized the Secretary of the Treasury to request the Reconstruction Finance Corporation to buy or lend on preferred stock of any bank in need of capital funds; (8) authorized the issue of emergency currency in the form of Federal reserve bank notes; and (9) permitted member banks to obtain emergency aid by borrowing on their notes secured by noneligible paper (nonmember banks were given the privilege of borrowing at the reserve banks for one year by an act passed March 24, 1933).

On March 10 the President issued an executive order authorizing the Secretary of the Treasury to approve of the issuance of licenses to member banks making application to the reserve banks. It further authorized state authorities to permit the reopening of nonmember banks. On March 13, 14, and 15 the Secretary of the Treasury gave licenses to reopen member banks certified as sound by the Comptroller. State authorities did likewise. Banks certified as sound seem to have been those in

possession of sufficient assets to enable them to obtain loans at the reserve banks to pay off all depositors if necessary. The Secretary of the Treasury issued a statement in respect to the new banking act to the effect that: "This legislation makes possible the opening of banks upon a sound basis, backed by an adequate supply of currency. Through this law the banks which will open will be placed in a position to meet all demands." The restoration of a genuine stockholders' equity in the reopened banks was postponed until a later date. By March 29, 12,800 out of 18,000 banks operating before the holiday had reopened. This number included member banks carrying approximately 90 per cent of the total member bank deposits. Reopened banks were not permitted to pay out gold or gold certificates, nor were they allowed to pay out currency for hoarding. Immediately a rapid return flow of currency to the banks set in which amounted to \$1,185,000,000 by March 29. Public confidence was restored and the emergency was past.

Causes of Bank Failures

The seriousness of American bank failures has stimulated much interest in possible remedies. Such remedies must necessarily be developed in the light of basic causes of failure. In Table 47 some of the more general causes of failure among national banks can be seen.²

After 1872 it appears that the most frequently occurring causes of failure during periods free from acute or prolonged depression are wholly or partially found in dishonest and illegal banking practices (Group 2). During periods of serious depression such causes become relatively less important. The unusually low figures for the causes appearing in Group 2 after 1923 are partially due to a change in classification which excludes violation of banking laws. The importance of fraud and violation of banking laws as causes of bank failure is especially pronounced between 1900 and 1920. It is quite natural to find depression in business, and depreciation of assets for reasons other than fraud and violation of banking laws, relatively unimportant during years of prosperity.

If one combines poor management with fraud and violation of banking laws into one general class of "internal causes" and con-

²The following discussion and tables are to a large extent taken from an article by the writer in the *Journal of Business*, July, 1935, on "Bank Failures, Causes and Remedies."

trasts the magnitude of the internal causes of failure with that of the "external causes," consisting of depreciation of assets and depression, it becomes clear that the internal causes are the predominant ones in all save the depression periods. One may conclude, therefore, that a prevention of the operation of these internal causes, consisting of incompetent management, fraud, and violation of established banking law, would go far in abolishing bank failure even in bad times.

TABLE 47

CAUSES OF FAILURE OF NATIONAL BANKS †

Ratio of Number of Occurrences of Each Cause to the Total Occurrences of All Causes (in Approximate Percentages)

Years	Poor Management (1)	Fraud and Violation of Law (2)	All Internal Causes (1) and (2)	Depression and Depreciation of Assets
1865-1872	47%	32%	79%	20%
1873-1879*	26	23	49	50
1880-1889	21	41	62	37
1890-1900*	31	29	60	38
1901-1905	21	48	69	30
1906-1908	25	48	73	26
1909-1913	20	55	75	25
1914-1920	25	63	88	12
1921-1922*	23	18	41	58
1923-1929:‡				
West of Mississippi River*	31	9	40	60
East of Mississippi River, mainly in agricultural South	32	26	58	41
1930-1931*	51	1	52	47

* The starred periods contain years of severe depression. These periods show a sharp decline in fraud and illegal practices as causes of failure.

† Computed from data given in the *Annual Reports of the Comptroller of the Currency*. The data apply to all national banks placed in the hands of a receiver.

‡ Beginning 1925, the comptroller's reports classify causes of failure only as: (1) incompetent management, (2) fraud, and (3) depression. This results in a reduction of the size of Group 2 by putting violation of banking laws, excessive loans, etc., into the category of poor management.

On the other hand, during the periods of the greatest number of failures—namely, periods of acute or prolonged depression—external causes become relatively important. This was particularly true of the failures in the area west of the Mississippi River. There much distress was caused, between 1923 and 1929, by the extended depression in agriculture following the era of land speculation. Corrective measures, both legislative and administrative, necessitate a discovery of the underlying causes for fraud,

lent, weak, and inefficient management and for the susceptibility of banks to severe depression.

Relation of size to failure. An examination of Table 48 shows that on an average in the whole country, banks of larger size fared better than the smaller ones, not only before 1930 when the depression was mainly confined to agriculture but during the 1930 to 1933 period as well. This fact has caused many to conclude that an important cause of failure is found in the smallness of banks.

TABLE 48

NATIONAL BANK FAILURES CLASSIFIED ACCORDING TO CAPITAL STOCK

	1925 to 1929	Jan. 1, 1930 to Oct. 31, 1933
<i>Capital of less than \$200,000:</i>		
Total number of banks	6,491	5,414
Number of failures	424	985
Rate of failure (by per cent)	6.6%	18.2%
<i>Capital of \$200,000 to \$999,000:</i>		
Total number of banks	1,155	1,081
Number of failures	29	171
Rate of failure (by per cent)	2.5%	15.8%
<i>Capital of \$1,000,000 and over:</i>		
Total number of banks	234	213
Number of failures	1	21
Rate of failure (by per cent) .....	.42%	10.0%

The rates of failure for banks of different sizes, however, are somewhat distorted by the fact that after 1929 the agricultural areas, which contained over two-thirds of the banks with capital of less than \$200,000, were subjected to continued severe depression, more acute, in fact, than that suffered in the larger cities. A more accurate picture of the relation of size to failure may be had by computing the failure rate of banks of different sizes for each general geographical area. The results of such a computation for the period 1930 to 1933 are given in Table 49 on page 419.

The rates of failure shown in Table 49 exhibit remarkable variety. Among the national banks of New England, the failure rate grows steadily worse as banks grow in size. Among banks of the East, those in the group next to the smallest in size fared the best. Otherwise, there is little difference. In the Pacific area the second from the largest group shows no failures, while the other three groups show little difference. The three

TABLE 49

FAILURES OF NATIONAL BANKS IN DIFFERENT AREAS CLASSIFIED ACCORDING TO CAPITAL STOCK, 1930-1933

Capitalization Group	New England			East			South			Middle West			West			Pacific		
	Total Number of Banks *	Number of Failures	Rate of Failure (By Per Cents)	Total Number of Banks *	Number of Failures	Rate of Failure (By Per Cents)	Total Number of Banks *	Number of Failures	Rate of Failure (By Per Cents)	Total Number of Banks *	Number of Failures	Rate of Failure (By Per Cents)	Total Number of Banks *	Number of Failures	Rate of Failure (By Per Cents)	Total Number of Banks *	Number of Failures	Rate of Failure (By Per Cents)
	242.5	5	2.1	1,287.0	157	12.2	1,158.0	230	19.9	1,402.0	378	27.0	969.0	170	17.5	350.7	56	16.0
	79.7	3	3.8	290.0	20	6.9	154.0	38	24.7	201.5	53	26.3	63.7	4	6.3	50.7	8	15.8
\$200,000 to \$499,000.....	23.0	1	4.3	79.0	9	11.4	44.7	16	35.3	63.2	15	23.7	9.5	1	10.5	20.5	0	0.0
\$500,000 to \$999,000.....	18.5	2	10.8	55.5	6	10.8	54.5	5	9.2	43.2	5	11.6	14.2	0	0.0	18.2	3	16.5
\$1,000,000 and over.....																		

* Total number of banks is the average of the number operating at the beginning of each year 1930-1933.

great agricultural areas, the South, the Middle West, and the West, show a marked difference between the failure rates for banks with a capital of \$1,000,000 and over and for the smaller banks. Here is the reason for the favorable showing of the group of largest banks in the country-wide averages of Table 48.

The banks with capital of over \$1,000,000 in the three agricultural areas consisted of the larger banks of the largest cities of those areas. Although dependent for their prosperity upon trade with the surrounding agricultural regions, these centers were essentially industrial and commercial in nature. The type of banking business available to such banks was not unlike that of the banks of similar size in the more highly industrialized areas. In fact, the failure rate for these banks in the South and Middle West is approximately the same as that for New England and the East. The excellent record of the large banks in the West is the only exception. One is forced to the conclusion that among the national banks, size has been a relatively unimportant factor in relation to the rate of failure. Even where the largest banks show some superiority, that superiority is due to the fact that they are being compared with small banks which were more exposed to the blows of depression. It is interesting to note that in a number of instances the larger banks show a distinctly less favorable failure rate than the smaller.

TABLE 50

INDIANA BANK FAILURES, 1925-1931 *

(Classified by Size of Capital Stock)

<i>Capital Stock</i>	<i>Failures in Each Group (In Percentage of Average Number of Active Banks in Each Group)</i>
\$ 10,000- \$ 19,999.....	19%
20,000- 29,999.....	26
30,000- 39,999.....	18
40,000- 49,999.....	22
50,000- 59,999.....	30
60,000- 69,999.....	33
70,000- 79,999.....	33
80,000- 89,999.....	50
90,000- 99,999.....	0
100,000- 199,999.....	18
200,000- 299,999.....	15
300,000- 399,999.....	28
400,000- 499,999.....	18
500,000 and over.....	12
Average for all groups.....	24

* *Report of Study Commission for Indiana Financial Institutions, 1931, p. 56.*

Additional evidence bearing on the relation of size to rate of failure is given in Table 50. Among Indiana banks with a capitalization of less than \$100,000, the smaller banks were frequently superior to the larger.

Failure rate of national banks and others. The failure experience of national banks has been much less serious than that of the state and private banks. Likewise, Federal reserve member banks have made a better showing than the nonmember banks. The superiority of member banks over nonmembers can be ascribed to the character of the banks which are members rather than to the fact of membership itself. This is indicated by the fact that the bulk of the Federal reserve membership is made up of national banks and the state banks located in the larger financial centers, both of which have relatively low failure rates. The suspension rates of the different types of banks during the period 1926 to 1932 are presented in Table 51.

TABLE 51

SUSPENSION RATE OF DIFFERENT CLASSES OF BANKS EXPRESSED IN
PERCENTAGE OF FAILURES TO TOTAL BANKS IN EACH CLASS *

(As of December 31 of the Preceding Year)

Year	National	State and Private	State Member	All Members	Nonmember
1926	1.5%	4.1%	2.4%	1.6%	4.2%
1927	1.1	2.9	2.4	1.3	2.9
1928	.7	2.3	1.2	.8	2.4
1929	.8	3.2	1.4	.9	3.3
1930	2.1	6.8	2.3	2.1	7.1
1931	5.8	12.0	10.6	6.4	12.1
1932	4.3	8.6	6.2	4.5	8.6

* Compiled from data appearing in the *Federal Reserve Bulletin*, for the years 1930-1933.

To eliminate the possibility of distortion of the failure rate because of the nature of the geographical distribution of the different types of banks, a comparison is made, in Table 52, for each geographical area. In each of the geographical areas, the failure experience of the national banks was better than that of the state banks. In many instances it was distinctly better. Although in all areas the failure rates of state banks were worse than those of the national banks, they were especially unfavorable in New England, the West, and the Pacific areas.

The state bank record may be attributed to two main causes. First, state bank charters have been too easily obtained by irre-

TABLE 52

COMPARISON OF FAILURES OF NATIONAL BANKS WITH OTHER BANKS BY GEOGRAPHICAL DIVISIONS, JUNE, 1929-MARCH 15, 1933
(Total Number of Banks Is the Average of the Number at the Beginning of Each Yearly Period Starting June 30)

Type of Bank	NEW ENGLAND			EAST			SOUTH			MIDDLE WEST			WEST			PACIFIC		
	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)
National banks	389	9	2.4	1,751	127	7.2	1,472	238	16.2	1,787	287	16.0	1,091	119	10.9	459	53	11.5
Other banks	693	47	6.8	1,047	230	13.9	3,679	1,136	30.8	6,415	1,924	30.0	2,457	727	29.6	774	184	23.7

sponsible and inexperienced individuals. Further, they have been issued with little regard to the actual banking needs of the community to be served. For example, in numerous instances Indiana villages of less than five hundred inhabitants boasted of two or more banks.³ The second cause is lax supervision of banks, evident in many states, because of inadequate banking laws and underpaid, overworked, and inefficient examiners.

The record of state and national bank failures shows a crying need for a unified banking system operating under Federal control. This would facilitate the prevention of overbanking re-

TABLE 53

PERCENTAGE CHANGE IN THE NUMBER OF BANKS FROM 1900 TO 1920, POPULATION PER BANK IN 1920, AND SUSPENSION RATE, 1921-1936, IN THE TEN STATES HAVING THE HIGHEST AND THE TEN STATES HAVING THE LOWEST SUSPENSION RATES *

<i>States</i>	<i>% Change in Number of Banks Between 1900 and 1920</i>	<i>Population per Bank, 1920</i>	<i>Suspension Rate, 1921-1936, per 100 Banks in Opera- tion June 30, 1920</i>
<i>10 states with the highest suspension rates:</i>			
Florida	+403.8	3,725	112.8
South Dakota	+266.5	917	83.1
Arkansas	+667.2	3,605	76.3
South Carolina	+477.5	3,709	74.4
Michigan	+ 64.0	4,236	74.4
Iowa	+ 67.4	1,242	72.3
Nevada	+371.4	12,346	69.7
North Dakota	+464.8	720	68.0
Nebraska	+103.4	1,084	65.1
North Carolina	+404.0	4,412	64.7
<i>10 states with the lowest suspension rates:</i>			
Pennsylvania	+ 59.5	5,722	30.8
Texas	+332.1	2,705	27.9
Vermont	+ 79.6	4,005	22.7
New York	- 42.7	10,795	22.2
California	+148.5	4,760	19.3
Connecticut	+ 37.0	8,522	18.7
Massachusetts	- 54.1	14,215	17.0
Delaware	+ 66.7	5,718	15.4
Rhode Island	- 50.7	18,315	12.1
New Hampshire	+ 21.2	5,539	11.3
For the United States as a whole	+118.3	3,496	49.7

* *Federal Reserve Bulletin*, December, 1937, p. 1220.

³ *Report of the Study Commission for Indiana Financial Institutions*, 1931, p. 88.

sulting from lax and competitive chartering while bringing uniformity of regulation and control. The present makeshift arrangement arising from the Federal Deposit Insurance Corporation activities cannot go to the root of the problem.

Branch banking. It would be desirable to compare the failure experience of branch banks with that of unit banks operating under similar conditions. Unfortunately, adequate data seem not to be available. However, on December 31, 1929, there were 822 branch banking systems with 3,547 branches reported as operating in the United States.⁴ During 1930 and 1931, 134 branch systems with 388 branches failed.⁵ Altogether, then, 134 branch systems out of a total of 822 operating at the beginning of the period failed during these two years, with a failure rate of 16.3 per cent. Putting it in another way, 522 out of a total of 4,369 banking offices operating under branch systems failed with a failure rate of 11.9 per cent. This may be compared with the failure rate for all national banks for the two years of 7.9 per cent, and for all state and private banks of 18.8 per cent. This scanty evidence leads one to suspect that branch banking as practiced in the United States is on the average inferior to the unit national banking system and is about on the general level of the state banks. One may add that this is not a fair test of the efficiency of genuine branch banking. Of the 388 branches involved in failures, only 113 were located outside of the home city of the parent bank, while none was able to obtain the advantages of diversification which might arise out of interstate branch banking.

Stockholders' equity in banks as related to failure. It is natural to suspect that one contributing factor in bank failures is insufficient stockholders' equity. Table 54 contains a comparison of the ratio of stockholders' equity to deposits between national banks which failed during the first ten months of 1932 and all national banks. The comparison is as of December 1, 1930, which is sufficiently far ahead of the date of the failures involved to give a fair picture.

The evidence is not at all conclusive that, one year or more before failure, the failed banks had a stockholders' equity ratio inferior to that of the average bank. The difference in the two

⁴ "Branch, Chain, and Group Banking," *Hearings of the Committee on Banking and Currency, House of Representatives*, p. 459.

⁵ Willis, H. Parker, and Chapman, John M., *The Banking Situation*, New York, Columbia University Press, p. 310, quoting from the unpublished report of the Federal Reserve Committee on branch, group, and chain banking.

groups of smaller banks is so slight as to be of little significance, while the equity ratio of the group of largest banks was actually greater for the failed banks than for all banks. This, of course, does not mean that a satisfactory ratio of invested capital is not a necessary feature of sound banking. It does indicate, however, that it will not overcome the effects of bad management.*

TABLE 54

RATIO OF STOCKHOLDERS' EQUITY TO DEPOSITS FOR NATIONAL BANKS WHICH
FAILED JANUARY 1-OCTOBER 31, 1932, AND FOR ALL NATIONAL BANKS *

(As of December 1, 1930)

<i>Size of Banks Classified According to Capital Stock</i>	<i>Number of Failed Banks</i>	<i>Stockholders' Equity to Deposits— Failed Banks (By Per Cents)</i>	<i>Stockholders' Equity to Deposits— All Banks (By Per Cents)</i>
Under \$200,000	183	15.7%	17.5%
\$200,000-\$999,000	52	14.6	16.9
\$1,000,000 and over	4	16.3	16.1

* Compiled from the *Annual Reports of the Comptroller of the Currency*.

Conclusion. The evidence presented here shows that faulty management rather than external circumstances is the major cause of bank failures. During prosperous times, fraudulent and illegal banking practices loom large among the causes of failures. During periods of prolonged depression, weak and inefficient management unable to meet the rigorous requirements of the times contributes heavily to failures. It follows, therefore, that the most fruitful remedies for bank failure must be sought in improved management. There are, naturally, two general methods of approach to the problem of improving bad bank management. The first involves the use of direct pressure; the second, the altering of the institutional framework within which bankers must function. One form of direct pressure might well consist of a requirement that all bank executives should demonstrate their possession of a minimum amount of knowledge of sound banking principles and practice by passing some form of examination. Such a plan might give rise to a body of "certified bankers," who would assist in the promotion of a professional attitude among bankers in general. In addition to such measures, there must be retained and strengthened the existing methods of ex-

* Also see Rodkey, R. G., *State Bank Failures in Michigan, 1935, Michigan Business Studies*, Vol VII, No. 2.

amination and control by public authority. The intelligent bank examiner and supervisor can very effectively improve the quality of bank management by insistence upon sound loan and investment policies, as well as by the detection of fraudulent and illegal practices.

A consideration of any alteration of the institutional framework surrounding banking activities confronts us with the question of what changes are desirable. Although it is commonly held that small banks are much more susceptible to failure than large banks, and therefore that large banking units are to be encouraged, the evidence indicates that the failure rate of large banks during the last few years is quite as great as that of small banks. An attempt to prevent failures by encouraging the development of banks of larger size cannot in itself be expected to be particularly beneficial. One benefit from such an attempt might arise from the fact that the increase in the size of banks in rural areas would necessitate the introduction of branch banking. If branch systems of the type capable of promoting diversification of loans and deposits resulted, there should be a definite gain in bank stability.

Another proposed improvement in the banking system takes the form of minimum requirements for the ratio of stockholders' equity to deposit liabilities. But the facts indicate that such requirements would be of little consequence in preventing failures. The failed banks studied generally had a ratio of stockholders' equity to deposits as substantial as that of the surviving banks and, in any event, well above the commonly suggested minimum.

Although the failure experience of state banks was considerably worse than that of national banks, membership in the Federal Reserve System appears to have been of little benefit. When one takes into account the fact that most state member banks are located in areas less exposed to depression, their superiority over nonmember banks becomes unimportant in the light of their decided inferiority in comparison with national banks. Attempts to force all state banks into membership in the Federal Reserve System appear to be of little use in preventing failures. On the other hand, very definite gains might be realized by the abolition of the dual system of chartering banks. This is true, first, because the state-chartered banks have been much more susceptible to failure than the national banks, and second, because the dual system has contributed to overexpansion of new banks during periods of prosperity. This outcome has in turn tended to increase the number of inexperienced and

incompetent bankers in the field and has resulted in excessive competition, leading to unwise banking practices. The effectiveness of public supervision could be greatly enhanced by a unified system of commercial banks under Federal control.

In both good and bad times defective bank management has all too frequently taken the form of excessive loans to the bank's own officers. This fact suggests two possibilities for improvement. First, the \$2,500 limit on loans by banks to their executive officers or to firms in which they are partners, as provided in the Banking Act of 1935, should be extended to include loans to all firms controlled in any substantial measure by such bank officers. This rule would definitely ban the doubtful practice of attempting an impartial appraisal of the banker's own credit standing and should go far toward reducing the abuses of excessive and fraudulent loans to insiders. Second, the temptation on the part of inside interests to engage in borrowing might well be reduced. An outright prohibition of all banking affiliates would be a wholesome change. This could be done with no harm to banking efficiency if branch banking barriers were abolished. Also, branch banking, in contrast with unit banking, furnishes a more adequate outlet for the energies and abilities of the capable banker and reduces somewhat the urge to develop outside business interests.

The possibilities of improvement in the management of banks seem greater under a sound branch banking system than under a unit banking system. However, the evidence indicates that branch banking as we have it in the United States has not on the average been equal to the average performance of the national banks, which are predominantly of the unit form. Branch banking, to be of any serious consequence, must be allowed to develop over wider areas than those permitted at present.

Rehabilitation of Banks

The reopening of the banks after the holiday by no means completed the task. In many communities there were no banking facilities; in others the banks in operation had little sound capital or stockholders' equity; while in some places banking facilities were inadequate to serve local needs. Finally, there was the problem of salvaging as much as possible from the banks that had failed.

Sale of capital obligations to the RFC. To strengthen the capital structure of the reopened banks, they were encouraged to sell preferred stock to the RFC (capital notes or debentures

were used where state law did not permit the issuance of preferred stock free from double liability). Such banks were first examined and were required to have a reasonable margin of owners' equity to protect the RFC's interest. Anticipated earnings were required to be sufficiently adequate to provide dividends or interest charges. When funds were advanced against capital notes or debentures or loaned against the security of preferred stock, the banks were required to give assurance that the management and the salaries would be satisfactory to the RFC while it owned any of their obligations. In the case of default on two dividends on preferred stock or failure to amortize the principal on such stock at 5 per cent per annum, the preferred stock may take control of the bank. The banks are subject to examination by the RFC while it owns any of their obligations.⁷ The RFC originally required a return of 5 per cent on stock or notes purchased with a 1 per cent rebate if retired within three years. As of July 1, 1936, it reduced the rate to 3 per cent.⁸

The larger banks were urged to lead the way in the sale of obligations to the RFC and to encourage similar action by smaller banks, many of which needed more capital funds in order to qualify for deposit insurance. On November 30, 1935, the RFC owned \$879,348,000 of preferred stock, capital notes, and debentures. The volume of such holdings has been declining as the banks have gradually retired these obligations. Capital notes, debentures, and preferred stock may not be retired unless the capital funds comprise from $\frac{1}{10}$ to $\frac{1}{4}$ of the deposits.⁹

Rehabilitation of closed banks. In many instances it seems desirable to rehabilitate a closed bank, either because of the need for its services in the community or because it offers a better way of salvaging the assets for depositors. The general principle of such rehabilitation involves the establishment of adequate sound capital in excess of the bank's liabilities to depositors. This may be accomplished by the sale of a sufficient amount of new stock, by the assessment of old stockholders, by waivers of depositors to their claims, or by a combination of methods. Two general methods have been used in rehabilitating closed banks since the holiday.¹⁰

Under what is known as the "straight rehabilitation plan,"

⁷ Upham, Cyril B., and Lamke, Edwin, *Closed and Distressed Banks*, Washington, Brookings Institution, 1934, pp. 191-193.

⁸ *New York Times*, July 13, 1936.

⁹ Upham and Lamke, *op. cit.*

¹⁰ *Ibid.*, pp. 125-134.

the existing bank is reorganized by: (1) writing off bad assets to the amount of the capital, surplus, and undivided profits; (2) a waiver of the depositors' claims by an amount necessary to bring the volume of deposits not waived down to equality with the sound assets; (3) the surrender of old shares by stockholders and a resale of these shares to them as a source of new capital funds; and (4) the sale of preferred stock to the public and to the RFC if necessary. Since the waiver of depositor claims has rendered the bank solvent, no claim for double liability can be exercised against the stockholders. The poor assets are set aside, and anything realized from them is applied to the waived deposits. Such an arrangement may be brought about, in the case of national banks, by the written agreement of persons holding two-thirds of the stock and 75 per cent of the unsecured deposits (or other liabilities), provided consent is given by the Comptroller. Depositors and stockholders who do not consent to the agreement are also bound. Upon the reopening of the bank, the unwaived portion of deposits is made available without restriction.

The second method used is known as "waiver and sale." Under it the depositors are called upon to waive their claims in excess of the amount that can be realized from a sale of the sound assets to another bank newly created. The newly organized bank purchases the sound assets and assumes the unwaived liabilities of the old bank. The unacceptable assets are transferred to a trustee, who liquidates them and applies the proceeds to payment of the waived claims. The amount available may sometimes be increased by means of a loan from the RFC against assets not sold to the new bank.

Liquidation in the absence of reorganization. A failed bank which cannot be reorganized is put into the hands of a receiver with authority to liquidate the assets and pay the proved claims. The appointment of the receiver has often proved to be a problem. Two principal methods have been used. Previous to the existence of the FDIC, the Comptroller of the Currency appointed the receiver for national banks, and the liquidation was carried on under the supervision of the experts in charge of the division of insolvent banks. Now the FDIC automatically becomes receiver for any failed national bank. Receivers for state banks were generally appointed by local courts and were answerable only to them. The more modern method of handling state bank liquidations is that used in Indiana, where the Department of Financial Institutions takes possession of a closed bank, and

its agents carry out the process of liquidation. The acts of this department, however, are subject to the approval of a court of competent jurisdiction.

The appointment of liquidating agents or receivers by the Comptroller of the Currency, by state authorities, or by local courts has been criticized on the grounds that jobs have been given on the basis of political considerations or for motives not in harmony with the best interests of the bank and the public. Liquidations are, at best, costly and wasteful. Claims against debtors are compromised when they might have been collected in full by the officers of a going bank; expenses for legal services are high. These difficulties explain in part the superior advantages of rehabilitation of a bank over a receivership even at the expense of giving up the right to enforce double liability on the stockholders. In spite of problems which arise from having agents of a central authority, instead of local persons, liquidate a bank, centralization of liquidation is a very definite advantage, since thus costs can be reduced and more experienced agents employed.

CHAPTER XXVIII

MONEY MARKET MIDDLEMEN

IN AN INTERMEDIARY position between the borrowers and the banks which furnish the funds are frequently found specialized middlemen. These middlemen fall naturally into two classes: those who assume an obligation on their own part and in some way guarantee the credit of the borrower, and those who merely act as brokers or dealers without guaranteeing the borrower's credit. In the first class are (1) stock market brokers, (2) finance companies, and (3) bill brokers (at times). In the second class are (1) the commercial paper houses, (2) dealers in Treasury bills, and (3) bill brokers. This classification is not all-inclusive, for there are factors, agricultural credit agencies, and merchants extending trade credit who are doing substantially the same thing.

Stock Market Brokers

Brokers borrow to re-lend. Although speculators who deal through stock market brokers may buy securities outright with their own funds, they commonly prefer to buy on a margin. Dealing on a margin consists of investing a sufficient amount of one's own funds to absorb any probable losses arising from a decline in security prices, and borrowing from a broker the remainder needed to make up the purchase price. The broker uses the securities so purchased as collateral for bank loans. He is therefore a middleman, standing between the lending bank and the speculator. A bank which makes brokers' loans benefits from a concentration of its security loans in the hands of a few borrowers and from the credit of the brokerage firm, which is a partnership subject to unlimited liability and regulated by the Stock Exchange.

Method of making brokers' loans. Brokers file a continuous loan agreement with the banks from which they expect to borrow, stating the terms to which any loans will be subject. Call loans

(subject to call on 24 hours' notice) may be made by direct agreement with the broker's own bank or through the money desk at the Stock Exchange. Loans made directly by the broker's bank are the last to be called when the lending bank wishes to reduce brokers' loans.

On the New York Stock Exchange, banks with funds to lend notify the clerk of the money desk. Brokers wishing funds apply at the desk, and the clerk, under the direction of the Executive Committee of the Stock Exchange Clearing Corporation, fixes the call loan rate most likely to equalize the supply and demand for funds. If the supply fails to satisfy the demand at the rate fixed, the rate will be advanced. Time loans between banks and noncustomers are arranged by money brokers, who charge a commission of about $\frac{1}{32}$ of 1 per cent of the amount of the loan.¹ Only on the New York Stock Exchange is there a genuine call loan market, since here only do banks make call loans to non-customer borrowers. Even on the New York Curb Market, the money desk appears to be unimportant. Demand loans made by banks in other cities to their own customers are not, in fact, considered subject to call. Such banks, when desiring to make genuine call loans, place them in New York City. In 1929 about one-half of the brokers' demand loans in that city were made through the money desk and hence were subject to quick call.²

Brokers' loans for others. Before 1933, banks in New York City not only lent to brokers on their own account and for country correspondents but also made loans for private individuals, firms, and corporations. Under the Securities Exchange Act of 1934, brokers dealing on registered security exchanges may borrow only from banks that are Federal reserve members or banks that are subject to the same regulations as members. Borrowing from "others" is therefore made impossible for trading in important speculative securities. This restriction was instituted because of the trouble experienced in 1928 and 1929, when attempts to restrict credit going into the stock market were largely thwarted by the large volume of loans by "others" outside the control of the Federal reserve authorities. Even before the practice was made illegal, the New York Clearing House Association had ceased to allow its members to make brokers' loans for any

¹ Beekhart, Benjamin H., ed., *The New York Money Market*, New York, Columbia University Press, 1931-1932, Vol. III, pp. 44-45, 49.

² *Ibid.*, pp. 47, 53.

persons or firms other than banks. The Banking Act of 1933 prohibits member banks from making security loans for non-banking customers.

Relation of the customer to the broker. The broker undertakes to purchase stock for the customer upon the deposit of a satisfactory cash margin. He reserves the right to hypothecate the securities as collateral for bank loans. The customer agrees to the sale of the securities at any time and without notice in case the broker is not satisfied as to the adequacy of the margin, or in case the broker's demand for payment of the loan is not immediately complied with. The customer pays interest on his debt at a rate related to the cost of money to the broker. Sec-

TABLE 55

MEMBER BANK LOANS ON SECURITIES TO BROKERS AND DEALERS IN SECURITIES
(In Thousands of Dollars)

<i>Date</i>	<i>In New York City</i>	<i>Outside New York City</i>
1928 Dec. 31.....	\$2,556,000	\$850,000
1929 June 29.....	2,025,000	921,000
Dec. 31.....	1,660,000	803,000
1930 June 30.....	2,265,000	819,000
Dec. 31.....	1,498,000	675,000
1931 June 30.....	1,217,000	515,000
Dec. 31.....	575,000	391,000
1932 June 30.....	274,000	283,000
Dec. 31.....	357,000	241,000
1938 Dec. 31.....		\$973,000
1939 Dec. 31.....		790,000
1940 Dec. 31.....		642,000
1941 June 30.....		575,000

tion 7 of the Securities Exchange Act requires the Board of Governors of the Federal Reserve System to issue regulations with respect to loans on registered, nonexempted securities. The Board issued Regulation T, governing loans by security dealers and brokers, and Regulation U, governing loans by banks. Under Regulation T, effective November 1, 1937, margin requirements on new loans are 40 per cent of the loan. Under Regulation U, also effective November 1, 1937, new loans by banks for financing the purchase or carrying of registered securities require 40 per cent margins. Loans by banks to brokers operating under Regulation T require margins of only 25 per cent of the current market value. The margin requirements apply only at the time the loan is made and not throughout its life, but if margins on a customer's account fall below the required amount owing

to a decline in the market value of securities pledged, the margin must be restored again before the customer may make any new purchases.

The Finance Company

Since 1900 a type of financial middleman has developed known as the finance company. Its functions consist of: (1) buying the receivables of business houses (accounts, notes, and acceptances); (2) advancing funds to dealers to finance the carrying of inventory; (3) advancing funds to dealers to finance retail installment sales; and (4) advancing funds against merchandise.³

The discount company. The discount company is a finance company which specializes in making advances to business firms by the purchase of their receivables. It is estimated that about two-thirds of all receivables purchased are accounts. Two methods are used: (1) Under the notification plan, the person or firm whose account is assigned is notified of the fact and instructed to pay the discount company. (2) Under the non-notification plan, the debtor is not notified of the assignment, but the discount company must rely upon the honesty of the seller in forwarding funds received from the debtor. The non-notification plan is the one most commonly used, and the discount company protects itself by reserving the privilege of inspecting the seller's books and by making a contract whereby the seller agrees to transmit the original receipts (checks, drafts, and so forth) on the day received.

Discount companies normally advance from 75 to 80 per cent of the face value of the receivables, with the remainder to be paid when the total debt is collected. The seller has a contingent liability for the ultimate collection. The receivables sold have average maturities from 45 to 60 days, but from 10 to 20 per cent are not paid when due. The charges are usually $\frac{1}{25}$ of 1 per cent per day on the net face amount of receivables bought, plus \$5 per \$1,000 on the first \$100,000 of receivables discounted within any twelve successive months. Sometimes the charge is $1\frac{1}{2}$ per cent per month on the face of the receivables. Discount companies obtain funds to an amount of several times their own capital by borrowing from local banks or in the open market on

³ A study by the Division of Analysis and Research of the Federal Reserve Board on "Finance Companies," *Federal Reserve Bulletin*, January, 1923, pp. 37-45. This study has been drawn upon extensively in the following discussion.

collateral trust notes. The collateral consists of the receivables deposited with a trustee.

The automobile finance company. Companies financing automobile dealers carry on two types of financing, wholesale and retail. Wholesale financing consists of advancing funds for carrying unsold cars. Amounts advanced are 80 to 90 per cent (sometimes more) of the wholesale price and are made against dealers' notes or acceptances secured by warehouse receipts, chattel mortgages, trust receipts, conditional sale contracts, or bailment leases. The particular types of legal instruments used to protect the finance company vary with the laws of particular states.

Retail financing involves the purchase of customers' installment notes, generally indorsed by the dealer, although in perhaps about one-fourth of the cases paper is indorsed by dealers without recourse. The bulk of the retail automobile finance paper of the large companies now bears the general indorsement of the dealer, thus giving the finance company recourse against the dealer in case the customer defaults. Customers' notes are most commonly secured by conditional sales contracts and chattel mortgages.

The National Association of Finance Companies recommended the use of conditional sales contracts in 42 states and in the District of Columbia, and the chattel mortgage in the remaining 6 states. The chattel mortgage, as used in installment sales, is void in Pennsylvania and Connecticut, while the conditional sales contract is treated as an absolute sale in Louisiana.

The average ratio of borrowed capital to owned capital is about 2.5 to 1 for the small and middle-sized companies, while larger ones at times borrow as much as five times their own capital. The customary standard practice has been to borrow by the sale of collateral trust notes secured by the deposit of dealers' notes and customers' notes with a trustee. Since 1933, finance companies have, to an increasing extent, been borrowing in the open market on their unsecured notes.* Smaller companies are often dependent upon their own banks for accommodation.

The most important single type of financing carried on by finance companies is that of the automobile trade. The experi-

* Information supplied by Milan V. Ayres, Analyst, American Finance Conference. In 1939 there were 1,066 sales-finance companies operating, of which 927 were "single city" and 139 were "multi-unit" companies. Cf. *Sales-Finance Companies and Banks' Holdings of Retail Installment Paper*, 1940, U.S. Dept. of Commerce, Bureau of the Census.

ence of companies and dealers in the United States in 1935 on installment paper is shown in Table 56.

TABLE 56

EXPERIENCE OF FINANCE COMPANIES AND DEALERS OF THE UNITED STATES, 1935*

	<i>Passenger Cars</i>	<i>Commercial Cars</i>
Average size of note purchased by finance companies:		
New cars	\$532	\$697
Used cars	238	333
"Skips" per 1,000 transactions—passenger and commercial combined†		2.4%
Percentage of repossessions:		
New cars	1.8%	10.4%
Used cars	7.8	16.0
Average loss per repossessed car:		
New cars	\$ 73	\$ 46
Used cars	93	40
Percentage ratio to total installment paper of paper over 12 mos.:		
New cars	64.3%	51.0%
Used cars	25.1	20.1
Percentage of cars sold by dealers on installments:		
New cars	58.2	55.9
Used cars	62.9	58.0

* Taken from estimates made by the National Association of Sales Finance Companies, Chicago.

† "Skips" refer to cases where buyers disappear, taking the cars with them.

The volume of retail motor sales financed on the installment plan in 1935 was 1,333,600 new cars and 1,791,900 used cars. The new-car financing amounted to \$734,100,000, and the used-car financing \$424,300,000. In addition, wholesale financing amounted to \$1,402,600,000.⁵

During 1939, sales-finance companies purchased retail-installment paper amounting to \$1,990,283,000, of which 74.5 per cent, or \$1,483,803,000, was to finance the sale of automobiles. The large degree of concentration in the business is shown by the fact that 927 single-city companies accounted for only \$257,055,000 of the total, while the 159 multi-unit companies handled the remainder. Commercial banks began to enter the field, and at the end of 1939 they held 28.6 per cent of the total amount of retail installment paper in the market.

Economic reasons for finance companies. Finance companies advance funds to concerns and individuals who are unable to find accommodation at banks. The banks benefit by the credit

⁵ *Time-Sales Financing*, April, 1936, p. 7.

of the finance company, which stands between the borrower and the bank. The reasons for the use of finance companies are: (1) the credit risk of the borrower does not meet the requirements of the bank; (2) the loans may have longer maturities than the banks desire; (3) installment sales must be carefully watched and involve occasional repossession and resale; and (4) the affairs of the borrower require careful supervision if loss is to be avoided. The bank which buys finance company paper is free from the risk and the very considerable work of analyzing and watching the borrower's credit standing. Instead, this task has been forced upon the finance companies as the price for getting their paper sold to the banks.

Finance companies are expensive means of obtaining working capital, and obviously business firms which must resort to them are at a disadvantage as compared with those able to obtain loans directly from the banks. The cost is comparable to that of obtaining trade credit under the common 2 per cent discount for cash. Likewise, installment purchases by consumers are made expensive, since heavy interest and service charges are added to the unpaid balance.

Dealers in Bankers' Acceptances

The acceptance market. Bankers' acceptances have already been described, and the importance of the Federal reserve banks in the establishment and maintenance of the market for acceptances has been considered. The market cannot operate, however, without specialists who act as intermediaries between sellers of acceptances and investors in them. These intermediaries are the acceptance dealers, who may be individuals, firms, or corporations.

The acceptance dealer.* The dealer scrutinizes the bills offered and may by his indorsement add to their acceptability. He must have wide contacts with investors who buy bills, and he must have sufficient capital, whether owned or borrowed, to enable him to carry a large and diversified portfolio. He obtains his bills (or acceptances) from several sources. His most important single source is the accepting banks which have discounted their own acceptances for the owners instead of forcing them to seek an independent market. About one-half of the bills bought by dealers in New York City are obtained directly from accepting

*This discussion is based mainly upon a study on "Dealing in Acceptances," in the *Federal Reserve Bulletin*, October, 1921, pp. 1166-1170.

banks, and the proportion is still greater for dealers in Boston and Chicago.⁷

Acceptance dealers usually buy the bills outright and rely for their main profit on selling at a lower rate of discount than that at which they buy. They operate extensively on borrowed funds. Most of them are also dealers in commercial paper, stocks and bonds, long- and short-term government obligations, and "Federal funds." They are therefore established firms possessing capital stock devoted to other uses, and commonly invest little of their own funds in acceptances. From 85 to 100 per cent of their portfolio may be carried on funds obtained in the call loan market. Their market consists mainly of banks in the larger cities, with which they keep in contact by salesmen, telegraph and telephone, and circularization.

Since the dealers borrow the bulk of their funds, the cost of funds in relation to the yield on the portfolio of acceptances has a special bearing on the profit to be realized. Call money rates are usually very close to the acceptance rate, so that the dealer expects to make little, if any, profit out of the difference. At times the call rates rise above the acceptance rate, with the result that the dealer is compelled to liquidate quickly to avoid loss. Under such circumstances the reserve banks come to the rescue with their 15-day repurchase agreements. At times a fairly large percentage of dealers' portfolios is carried under resale agreements; this has been particularly true in New York City. The reserve banks charge rates of discount equal to their ordinary buying rates on similar bills. The rates are fixed with an eye to assisting the dealer to avoid loss. If dealers are not in need, the rate will be fixed at a level above the open-market rate on bills. If dealers need help, the reserve banks lower their buying rates somewhat below the rate at which dealers sell, so that dealers will not lose.

Dealers "recognized" by the Federal reserve banks are those whose indorsement is sufficient to satisfy the reserve banks when buying for their own account or for foreign correspondents or is adequate to protect the bank in entering into resale agreements. Ten recognized dealers were listed in answers of the reserve banks to questionnaires sent to them during the Senate hearings on the subject: "Whether a dealer's indorsement is recognized or not depends on the possession of a substantial net worth in relation to the business transacted; the experience and

⁷ "Operation of National and Federal Reserve Banking Systems," *Hearings*, *op. cit.*, pp. 926-935.

ability of the management; his clientele; character of transactions; rapidity of distribution; his willingness to bid for bills and to circulate at frequent intervals a list of offerings.”⁸

Since bills sold to the reserve banks must be satisfactorily indorsed, dealers offering bills obtained directly from the accepting banks must indorse them. If a bill has previously been held by a bank for investment and has been indorsed and sold to the dealer, the dealer's indorsement is not necessary. Indorsed bills sell at $\frac{1}{8}$ of 1 per cent under the rate for unindorsed bills. At the end of 1930 the Discount Corporation of New York, one of the largest dealers in acceptances, having a capital of \$9,800,000, was contingently liable on indorsements for \$129,000,000.⁹

*The Commercial Paper Market*¹⁰

Commercial paper. Open-market commercial paper is a valuable aid to liquidity and diversification for the banks of America. It is especially important for the smaller unit banks whose local loans must be made to a narrow range of industries. It is also useful to banks which have seasonal excess funds for investment. It facilitates industrial and geographical diversification, and, because of its variety of denominations and maturities, it helps the individual bank to arrange a suitable portfolio of liquid assets. The paper of good firms has an enviable reputation for prompt payment at maturity and is normally eligible for rediscount when within three months of maturity.

Denominations vary from \$2,500 to \$50,000, with \$5,000 as the most common denomination. The size offered is determined by the requirements of banks which are in the market to buy at any particular time, since commercial paper so bought is subject to the 10 per cent limit. The bulk is unsecured single-name paper, although some paper is indorsed and a small amount is secured by collateral.¹¹ The maker is normally the payee who has indorsed the paper in blank. The paper thus becomes payable to bearer and requires no further indorsement to pass title.

⁸ *Hearings, op. cit.*, p. 848.

⁹ Beckhart, *op. cit.*, p. 381.

¹⁰ The material in this section was very largely taken from a study by Steiner, W. H., of the Division of Analysis and Research of the Federal Reserve Board, published in the *Bulletin* in August and September, 1921, pp. 920-926, 1052-1057. A good account of the commercial paper market appears in Beckhart, Benjamin H., *The New York Money Market*, Vol. III.

¹¹ Eighty per cent is estimated to be paper of commercial and industrial firms, of which five-eighths is unindorsed. Twenty per cent is collateral trust paper of finance companies and other financial middlemen. See Foulke, Roy A., *The Commercial Paper Market*, Cambridge, Bankers Publishing Co., 1931, pp. 7-10.

CHAPTER XXIX

AGRICULTURAL CREDIT

SINCE the beginning of the twentieth century, the credit problems of the American farmer have become more pressing, partially as a result of rising land values following the disappearance of free land, and partially because of the increased intensity of cultivation, which requires larger amounts of working capital. It is ordinarily said that the farmer requires three separate types of credit: (1) long-term mortgage credit to purchase land; (2) intermediate-term credit (running from six or nine months up to three years) to finance the purchase of fertilizer, stock for feeding and breeding purposes, equipment, and improvements; and (3) short-term credit of not over nine months to purchase seed and feed, and to finance the storage of crops awaiting market.

The farmer's credit needs are increased by the fact that it is generally impossible for him to incorporate and get capital by the issue of securities. He must, therefore, depend upon what capital he owns and can muster by borrowing to provide the relatively large amount of funds required in agriculture. Being a small-scale borrower engaged in a highly risky enterprise, he must, for the most part, borrow locally where capital is normally scarce and dear. Rates as high as 10 to 15 per cent have been common in some districts.¹ Long-term mortgage credit has been obtained: (1) from local money lenders; (2) from mortgage loan companies; and (3) from banks and insurance companies. Before 1914, national banks were not permitted to lend on real estate mortgages, but the Federal Reserve Act permitted those outside of central reserve cities to make five-year loans on farm land. State banks, on the other hand, have generally been allowed to lend on real estate, and farmers have obtained credit

¹ Baird, Frieda, and Benner, Claude, *Ten Years of Federal Intermediate Credits*, Washington, Brookings Institution, 1933, p. 22.

from that source. For shorter-term credit the farmer in the past has relied upon: (1) merchants or dealers, who in turn obtained credit directly or indirectly from city banks; and (2) local banks. In either case, the cost was frequently high.²

Long-Term Credit Institutions

The Federal land banks.³ The first important attempt made to improve the farmer's credit facilities was made in 1916, when Congress authorized the organization of twelve Federal land banks to have a minimum capital of \$750,000 each. The capital was originally subscribed by the Federal Treasury, but national farm loan associations become stockholders by virtue of the fact that they must subscribe to stock in amounts equal to 5 per cent of the loans made at the land banks. When the loan associations buy enough stock, the government holdings are retired.

National farm loan associations. If not less than ten persons wish to borrow from a Federal land bank, they may organize a national farm loan association. Each association elects a board of directors of at least five members, who choose a secretary-treasurer and a loan committee of three. Its application to the Farm Credit Administration for a charter includes an affidavit stating that each of the organizers is the owner, or about to become the owner, of farm land qualified as a basis of a land bank loan, and must be accompanied by a subscription to stock in the land bank equal to 5 per cent of the desired loans. Once the association is set up, a new borrower applies for membership and subscribes to stock in the association to an amount equal to 5 per cent of his prospective loan. He may become a member upon a two-thirds vote of the directors. The borrower's application is referred to the loan committee, which appraises the land and makes its report. If it is unanimously approved by the loan committee and by the directors, a report to that effect is sent with the application to the land bank, which may grant the loan on further investigation.

Security for loans made at land banks. The local loan association indorses the member's note before it is sent to the land bank. This indorsement acquires value from the fact that the

² *Ibid.*, p. 19.

³ At the time when the Federal land banks were organized, provision was made in the law for the organization of privately owned joint stock land banks with powers and privileges similar to those of the Federal land banks. The unfortunate experiences of some of the joint stock land banks tended to discredit the system. The Emergency Farm Mortgage Act of 1933 provided for a termination of their functions and for their liquidation.

FARM CREDIT ADMINISTRATION
District Boundaries and Location of District Units

★ FARM CREDIT ADMINISTRATION WASHINGTON OFFICE
 ■ Includes Central Bank for Cooperatives
 ■ FARM CREDIT ADMINISTRATION DISTRICT UNIT
 ○ Federal Land Bank
 ● Intermediate Credit Bank
 ▲ Bank for Agriculture
 () LOCATION OF NATIONAL FARM LOAN ASSOCIATIONS AND PRODUCING CREDIT ASSOCIATIONS NOT SHOWN

★ **FARM CREDIT ADMINISTRATION WASHINGTON OFFICE**
Includes Central Bank & Cooperatives

■ **FARM CREDIT ADMINISTRATION DISTRICT UNIT**
Federal Land Bank
Intermediary Credit Bank
Production Credits Corporation
Bank for Cooperatives

LOCATION OF NATIONAL FARM LOAN ASSOCIATIONS AND PRODUCTION CREDIT

CHART 15.

association owns stock in the land bank equal to 5 per cent of the total loans. This stock is purchased out of the proceeds of the sale of a like amount of its own stock to its members. Moreover, members of the association are doubly liable on their stock ownership for all debts of the association incurred before 1933. Since this equity provides the basis for the liability of the member borrowers, it furnishes an essential element of co-operative credit and should make for interest on their part in the soundness of loans extended.

In addition to the association indorsement, the loan must be secured by a recorded first mortgage on land within the district and must not be over 50 per cent of the appraised value of the land itself, plus 20 per cent of the value of permanent insured improvements. The loan must provide for amortization of principal and payment of interest so as to extinguish the debt in from 5 to 40 years. In addition, the whole or any part of the debt may be paid after five years. The rate of interest cannot be more than 1 per cent above the rate on the last issue of land bank bonds. Only persons actually engaged, or about to become engaged, in the cultivation of the mortgaged land can borrow. The purposes of such loans may be: (1) to buy agricultural land, equipment, fertilizer, and livestock; (2) to make improvements on farm land; (3) to liquidate the indebtedness of the owner incurred for agricultural purposes; and (4) for general agricultural purposes.

Emergency status of national farm loan associations. The heavy demands for refinancing loans at the land banks since 1933 have resulted in a short-circuiting of the local associations in two ways. (1) Beginning August, 1933, applications for loans were received directly by the land banks without previous approval by the local associations. This situation arose from the fact that many applications for loans were of the sort not eligible to be handled through the regular land bank channels. Those finally approved, however, required the ultimate approval and indorsement of the association if the loans were to be made through it. (2) In cases when a borrower does not have access to borrowing through an association, the land bank may make a direct loan, carrying a rate of interest $\frac{1}{2}$ of 1 per cent higher than that paid by borrowers through associations. The borrower must subscribe to stock in the land bank to an amount equal to 5 per cent of his loan. If a direct loan borrower joins an association later, he benefits by a corresponding reduction in interest.

Attempts are now being made to return the local associations to their previous position in respect to land bank loans. This reversion is necessary if the co-operative character of these loans is to be maintained. The local associations are required to set aside, semiannually, 10 per cent of their net earnings until the reserve account equals 25 per cent of the capital stock, and 5 per cent thereafter.

As an additional means of strengthening the position of the national farm loan associations, it has been the policy of the Farm Credit Administration, wherever possible, to require the local farm loan associations to handle the local problem of servicing loans made through them. This procedure serves the double purpose of focusing the attention of the local officials of the associations on the problems and responsibilities which accompany co-operative credit and of providing them with an income derived from the fees paid by the Federal land banks for the service. On December 31, 1939, out of the 3,722 operating national farm loan associations, 3,486 were servicing their loans.

Because of the impairment of capital due to depression losses, many national farm loan associations were compelled to become inactive, that is, were unable to make additional loans for members. In 1937, an amendment to the Farm Credit Act permitted the land banks to loan to farmers through these associations with impaired capital. To accomplish this, new and old borrowers are separated, and there is no inter-group liability save for operating expenses of the association.

Source of land bank funds. The Federal land banks obtain part of their capital from government subscription and the remainder from the local loan associations and direct borrowers. On December 31, 1939, their combined capital was \$236,475,965, 52 per cent of which was owned by the government. The bulk of the land bank funds are obtained by the sale of consolidated bonds which are exempt from Federal, state, and local taxation and are the obligation of all twelve Federal land banks. Collateral security consists of farm mortgages held in trust. Each land bank is required to set aside 50 per cent of its semiannual net earnings until its reserve account equals its capital stock.

Emergency financing by land banks. On January 23, 1932, the law was amended to permit the Secretary of the Treasury to subscribe to \$125,000,000 additional stock in the land banks to strengthen their capital structure. Relief to borrowers already in debt to the land banks was extended in 1933 by further amendments to the law which: (1) permitted needy borrowers

to postpone (within five years) any installments, with interest on the unpaid amounts accruing at simple interest at the regular rate; and (2) reduced the maximum interest rate to $4\frac{1}{2}$ per cent for five years. To offset any loss in the land bank revenue, the Secretary of the Treasury was required to subscribe to the surplus accounts of the land banks. The maximum amount of any individual's loan was raised from \$25,000 to \$50,000 with the approval of the Land Bank Commissioner.

Advantage has been taken of the low interest rates of the 1930's to refund land bank bonds. This has made possible reduction in interest rates on loans to farmers without putting the whole burden of the reduction upon the United States Treasury. During 1939 the remaining Federal land bank bonds, issued by individual land banks and bearing $4\frac{1}{2}$ per cent interest, were retired. The consolidated issues which replaced them bear coupon rates varying from 3 to 4 per cent.

In 1941 the contract rate on farm loans made through the national farm loan associations was 4 per cent and the contract rate on loans made direct to farmers by the land banks was $4\frac{1}{2}$ per cent. However, by act of Congress the actual rate to be paid by farmers on the national farm loan association loans was reduced to $3\frac{1}{2}$ per cent and on direct loans to 4 per cent. These low rates were to be in force until July 1, 1942. Because this low rate of interest requires the Treasury to make up losses by the land banks, farmer borrowers are the beneficiaries of a government subsidy on their long-term credit.

To give relief to farmers in debt to other institutions or individuals, the land banks were authorized to purchase first mortgages on farms either for cash or by exchanging farm loan bonds for them, paying no more than 50 per cent of the "normal value" of the land and 20 per cent of the value of the permanent improvements. The mortgages were refinanced under the favorable existing land bank loan terms on the basis of the amount paid by the land bank. The borrower whose mortgage was bought obtained relief in lower interest and the opportunity for postponement of payment for five years; in addition, he often stood to gain by a scaling down of the debt required to bring the face amount of the loan below 50 per cent of the normal value of the land and 20 per cent of the value of the improvements. Two difficulties arose in the execution of this program. First, creditors could not be compelled to sell their mortgages, and hence relief to debtors in good standing with the creditors was impossible to arrange unless the creditor was hard pressed for

liquidity. Otherwise, creditors preferred a good mortgage to cash or the low-interest-bearing bonds offered in exchange. Second, if the land bank were to offer an attractive enough price to interest the creditors holding a mortgage in default, the *normal value* had to be stretched considerably above the existing land values of 1933 to 1934.

Emergency financing by the Land Bank Commissioner. Since many farmers' debts were in excess of the amount which could be financed through regular land bank loans, the Land Bank Commissioner was authorized to lend on first and second mortgages on both real and personal property to an amount (including any prior indebtedness) equal to 75 per cent of its normal value. Such loans might not exceed \$5,000 and must be amortized over not more than ten years if secured by personal property. These loans were for: (1) refinancing past debts; (2) providing working capital; and (3) providing funds for the farmer to exercise his equity of redemption or to repurchase land lost by foreclosure. The contract rate on Commissioner's loans in 1941 was 5 per cent. However, the actual rate until July 1, 1942, was fixed by act of Congress at $3\frac{1}{2}$ per cent.

The Federal Farm Mortgage Corporation. The Federal Farm Mortgage Corporation is a government-owned corporation, organized in 1934 and permitted to issue up to \$2,000,000,000 in bonds fully guaranteed by the government. The bonds have been: (1) sold to obtain funds for Land Bank Commissioner loans; (2) sold to furnish the land banks with cash at times when their own unguaranteed bonds would not command a good market; and (3) exchanged for the less marketable land bank bonds and used by the land banks in the purchase of mortgages by direct exchange.

Other emergency agricultural loans. As early as June, 1929, an Agricultural Marketing Act was passed, setting up the Federal Farm Board, equipped with a \$500,000,000 revolving loan fund out of which loans might be made to co-operative marketing associations and stabilizing corporations. These loans were made to finance the storage and marketing of agricultural commodities and to control crop surpluses. The Board was also authorized to "insure" co-operative associations against any decline in the prices of products held.

On May 19, 1932, the Reconstruction Finance Corporation was authorized to create in any land bank district a regional agricultural credit corporation with a capital of at least \$3,000,-

000 and authority to make agricultural loans and to rediscount the notes obtained, when eligible, at the Federal reserve banks or the intermediate credit banks. In 1933 the government organized the Commodity Credit Corporation to make loans to agricultural producers against commodities in storage. In addition, Congress has regularly authorized either the Secretary of Agriculture or the Farm Credit Administration to extend small loans to farmers in drought- and storm-stricken areas.

Intermediate Credit

To improve the acceptability of farmers' notes (in excess of nine months' maturity) given to obtain working capital, the government, under an act of March 4, 1923, established twelve intermediate credit banks. These banks are located at the same places and have the same management as the Federal land banks. The stock of each is at least \$5,000,000 and is owned by the government. One-half of the net earnings are to be carried to surplus until it equals the subscribed capital, and thereafter 10 per cent is carried to surplus. The remainder of the net earnings go to the government. These banks may issue tax-free debentures, secured by discounted paper, to an amount not over ten times the paid-up capital and surplus. All intermediate credit banks are indirectly liable for these debentures. These banks may rediscount or purchase agricultural paper of not more than three years' maturity held by banks, agricultural credit corporations, livestock loan companies, or co-operative credit and marketing associations, and may make loans secured by such paper. They may also make direct loans to agricultural co-operative associations up to 75 per cent of the value of warehouse receipts, shipping documents, and mortgages on livestock offered as collateral.

The interest rate charged by the Federal intermediate credit banks may not exceed the rate on their debentures by over 1 per cent. Paper is not eligible to be offered to the intermediate credit banks for discount or collateral if the maker is charged a rate more than 3 per cent in excess of the discount rate of the intermediate credit bank unless a wider spread is approved by the Governor of the Farm Credit Administration.

Improved Short-term Credit Facilities

Production credit corporations. The farmer, particularly in the West, has always borrowed at a disadvantage. The collapse

of commercial banks in the agricultural areas increased these difficulties and in many instances shut off completely his contact with sources of credit. The government stepped in with emergency loans, made both directly and indirectly through the RFC's regional agricultural credit corporations. But permanent improved short-term credit facilities for agriculture were required, and in answer to this need, production credit corporations and production credit associations were provided in 1933. There are twelve production credit corporations, each located at the same place as the land bank and intermediate credit bank of its district, with a combined capital of \$120,000,000, which belongs to the government. The production credit corporations purchase Class A Stock in the production credit associations in an amount equal to approximately 20 per cent of the loans which the association is expected to make. Class A Stock is nonvoting but is preferred as to assets. The production credit corporations formulate regulations governing management, credit policies, and accounting and office procedures for the production credit associations.

The production credit associations are local lending units, operating co-operatively. Their members purchase Class B Voting Stock (one member has one vote) to an amount equal to 5 per cent of their loans. The associations make short-term (up to one year) loans to farmers. Their capital funds are invested in approved securities, which are in turn pledged as marginal collateral with the intermediate credit bank when the association offers borrowers' indorsed paper for discount or as collateral for loans. Borrowers may not be charged a rate more than 3 per cent in excess of the discount rate of the intermediate credit bank unless specifically permitted by the Governor of the Farm Credit Administration. In 1939, when the intermediate credit banks reduced their loan rate to the production credit associations to 1½ per cent, the rate charged farmers was reduced to 4½ per cent. The loans of these associations are being substituted for the loans of the regional agricultural credit corporations now in liquidation.

Several distinct advantages are claimed for the work of the production credit associations. Not only do they provide adequate credit at low rates to farmers where local banking facilities are inadequate or when the farmers' credit position will not satisfy the banks, but also they are setting new and improved standards in short-term agricultural credit practices. Their budgeting of farmers' credit needs and his ability to repay out

of income, instead of an exclusive dependence upon collateral, represents a step in the right direction.

The size of loans made by the production credit associations is, on the whole, small. The minimum-sized loan is \$50, and about one-half of all loans maturing in 1939 were for less than \$450. The 529 active production credit associations on March 31, 1941, had outstanding loans of \$195,296,000. Comparing this figure with the agricultural loans of insured banks of \$1,280,000,000 at the same date indicates that the short-term agricultural credit business is by no means in immediate danger of being monopolized by the production credit system.

For convenience of borrowers needing small amounts, each production credit association carries a cash fund out of which the loan committee may advance funds without waiting until the borrower's note can be sent to the intermediate credit bank for discount. Of total loans outstanding at the end of 1939, 84.5 per cent represented paper rediscounted at the intermediate credit bank, while 15.5 per cent was carried in the cash loan funds.

The banks for co-operatives. To care for the needs of agricultural co-operatives, a Central Bank for Co-operatives and twelve district banks for co-operatives have been set up. The Central Bank lends to national or regional farmers' co-operatives, while local co-operatives are cared for by the district banks. The capital stock of these banks was obtained from the revolving fund established under the Agricultural Marketing Act of 1929. Borrowers subscribe to stock to 5 per cent of the amount of their loans. The lending powers of these banks are now extended to include loans to co-operatives furnishing farm services (such as mutual insurance companies); loans for purchasing, testing, grading, distributing, or furnishing farm supplies; and loans for marketing farm products.

Management of the farm credit system.⁴ The farm credit system is under the control of the Farm Credit Administration created May 27, 1933. This Administration is the successor to several other organizations and was set up to give uniform centralized control. It has control over the land banks, the Land Bank Commissioner loans, the intermediate credit banks, the production credit system and the banks for co-operatives, the Federal Farm Mortgage Corporation, and emergency crop and seed loans.

⁴ For a good account of the present farm credit system, see the study sponsored and published by the American Institute of Banking, *Farm Credit Administration*, 1934.

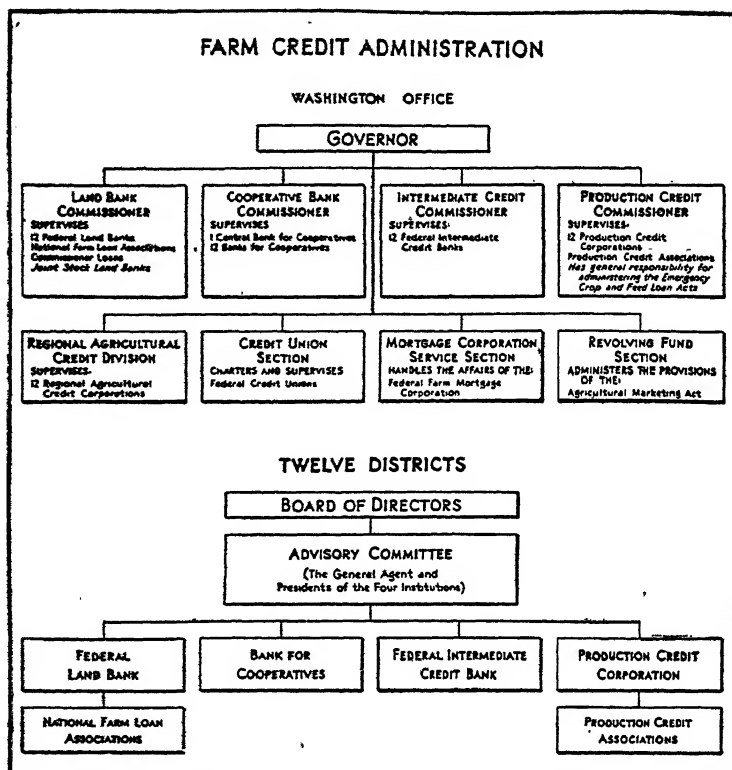


CHART 16.

Economic importance of a Federal-sponsored credit system. The magnitude of the loans of the farm credit system may be seen from Table 57. The system as it now stands is heavily subsidized by the Federal Government. In addition to its investment in purely emergency lending agencies, the government, at the end of 1935, had an investment of almost \$500,000,000 in agencies intended to be permanent in nature. Some of this investment will be withdrawn as borrowers increase their ownership and the agency takes on more of the characteristics of true co-operative credit institutions. A heavy initial investment by the government to furnish a stockholders' equity as a basis for borrowing was necessary if a co-operative credit agency of sufficient size to be effective was to be established. But it is important that the government interests be maintained at the lowest level compatible with the best functioning of the farm credit system if it is to become self-supporting and powerful enough

TABLE 57

NUMBER AND AMOUNT OF FARM CREDIT ADMINISTRATION LOANS
OUTSTANDING MARCH 31, 1941 *

<i>Institution</i>	<i>Amount</i>
Farm mortgage loans:	
Federal land bank loans	\$1,866,697,000
Land Bank Commissioner	659,016,000
Total	\$2,525,714,000
Short-term credit:	
Production credit associations	\$ 194,558,000
Emergency crop loans	126,522,000
Drought relief loans	51,383,000
Regional agricultural credit corporations	7,009,000
Federal intermediate credit banks to private financing institutions	41,040,000
Total	420,512,000
Loans to co-operatives:	
Federal intermediate credit banks	\$ 351,000
Banks for co-operatives	73,132,000
Agricultural Marketing Act revolving fund	15,739,000
Total	89,222,000
Grand Total	\$3,035,448,000

* Farm Credit Administration, *Monthly Report on Loans and Discounts*, March, 1941.

to be anything more than a channel for mere governmental aid. The expansion of the various classes of agricultural loans after 1933 may be seen in Chart 17.

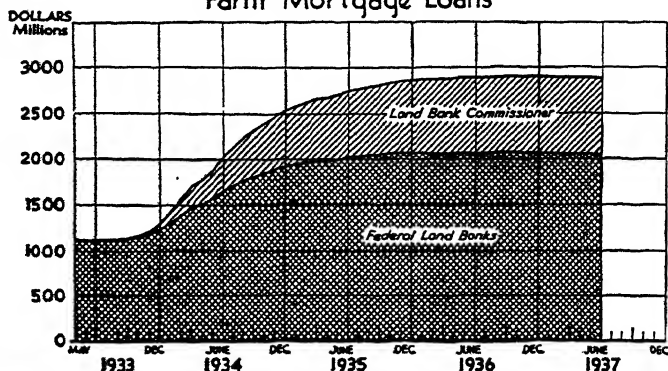
The advantages to the farmer of co-operative credit include: (1) access to the best money markets through the increased scale of borrowing; and (2) lower rates due to the diversification of risk and protection arising from the co-operative liability feature. Government control helps to insure necessary management of proper quality.

The development of the farm credit system may have profound effects upon the problems of the rural banker. It is not necessary that it monopolize the extension of farm credit, but merely that it supplement existing sources of credit in order to be of real service to the farmer. Bankers, however, feel that it presents a form of competition which is difficult to meet. The fact that the government furnishes a substantial part of the owners' capital and yet does not require any return is one source of unfair advantage. Another cause for complaint is found in the fact that obligations of the farm credit agencies offered in the market

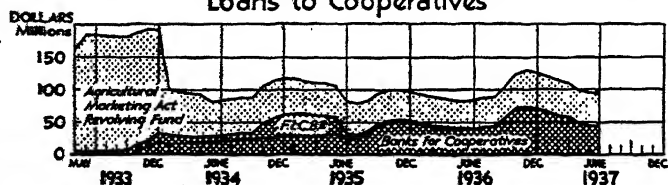
FARM CREDIT ADMINISTRATION LOANS OUTSTANDING (at End of Each Month)

Permanent Institutions
 Emergency Institutions
 Institutions in Liquidation

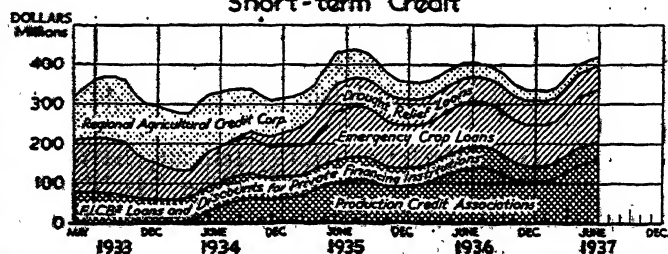
Farm Mortgage Loans



Loans to Cooperatives



Short-term Credit



FARM CREDIT ADMINISTRATION

DIVISION OF FINANCE AND RESEARCH PL 10179

CHART 17.

for investment are exempt from Federal, state, and local taxation. In the face of this competition, private lenders must in many instances be content with a smaller rate of return than heretofore. The country banker must choose between purchasing the obligations of the credit agencies (such as land bank bonds and intermediate credit debentures) and aggressively meeting the competition locally on its own grounds. There is evidence that he can meet this competition successfully in some cases at least. Production credit loans, for example, cost the farmer more than the rate of interest charged on the loan. An inspection fee must be paid by the applicant for a loan. This amounts to at least \$3 and is a little less than 1 per cent of the face of loans under \$1,000. Added to this is the application fee of \$.50, an abstract fee of about \$.50, and a mortgage filing fee of \$.60. Further, the borrower must tie up 5 per cent of his loan in stock in the association. If a borrower requires \$500, the incidental costs, including the interest on \$25 invested in the stock of the association at $4\frac{1}{2}$ per cent, would be about \$7.70. The rate of interest charged (1941) is $4\frac{1}{2}$ per cent. The total cost of borrowing \$500 for one year would be about \$32.85, bringing the cost of the loan up to 6 per cent per year. In addition, the borrower sometimes must wait about two weeks from the time he makes application before the funds are forthcoming. Under these circumstances local banks should not have any great trouble in obtaining the cream of the short-term farm loan business if they wish it.

CHAPTER XXX

PRICE MOVEMENTS AND THEIR CONSEQUENCES

The Measurement of Price Changes

THE central theme in the study of monetary problems is the behavior of prices. Some method of measuring average price movements is needed both for analyzing causes and as guides in the attempt to modify and control the movement of prices. The basic monetary problem, as it relates to economic welfare, arises from the difference in the pace and magnitude of changes which occur among prices of different types. The cost of living of wage earners, wholesale prices, agricultural prices, and durable goods prices, to mention a few, show considerable divergence in their movements. Index numbers which measure particular groups of prices are, therefore, of vital importance if factual data are to be used to enlighten the study of monetary problems.

The index number as a device for measuring price movements. The index number is a device which permits measuring the average behavior of a number of individual prices. Its practical usefulness derives from the fact that prices have some tendency to cluster together so that a movement in the price index may be taken as indicative of a similar movement in the bulk of the particular prices which are included in the index. If a price index be made too broad and all-inclusive, so that it averages too wide a variety of prices, its movements will show but little of practical use in respect to relative movements of different types. It is this relative movement of prices which is important. A broad index, such as Snyder's general price index, conceals important relative movements of the several groups of prices, and for this reason has less practical value than the more specialized types of index.

The choice of prices to be measured. The use to be made of an index number must largely govern the particular group of commodities whose prices are to be measured. For example, if

CHAPTER XXVII

BANK FAILURES

AN UNPRECEDENTED number of bank failures occurred in the United States during the period from 1921 to 1933. The agricultural depression, which began with the general business collapse of 1920 to 1921, continued with varying degrees of intensity down to 1929 and took a heavy toll in bank failures in agricultural areas. During the years 1921 to 1929, over 5,600 banks failed with deposits of more than \$1,700,000,000. The prolonged and acute depression which began late in 1929 brought a still greater flood of failures, this time in the industrial centers as well as in the agricultural districts. Between January 1, 1930, and March 15, 1933, 5,492 banks suspended with deposits of \$3,500,000,000. By the end of March, 1933, 5,200 banks, operating before the crisis, with deposits of over \$4,000,000,000, had not been licensed to reopen. This meant suspension of over 16,000 banks with deposits of over \$9,000,000,000 between 1921 and the end of March, 1933, not counting temporary suspensions arising directly from the bank holidays.

The banking holiday. The bank failure situation became serious in 1930 when 1,345 banks with deposits of \$864,000,000 suspended. Conditions became rapidly worse in 1931, with 2,298 failures involving \$1,691,000,000 in deposits. The banks themselves attempted to meet the difficulties by setting up, in October, 1931, the National Credit Corporation, authorized to issue up to \$1,000,000,000 in debentures which were to be sold to banks. The proceeds were to be lent to hard-pressed banks attempting to liquidate their assets in the face of runs started by such wholesale failures. It was hoped that this procedure would stem the tide for the solvent banks. The National Credit Corporation proved ineffective, however, although the number of failures declined from 522 in October to 175 in November, 1931.

On January 22, 1932, Congress passed an act authorizing the organization of the Reconstruction Finance Corporation, a gov-

ernment corporation with power to issue debentures which were sold to the Treasury, and to lend funds to distressed financial institutions, railroads, and farmers. Between February 29, 1932, when it started operations, and December 31 of that year, the RFC advanced \$4,450,000,000 to banks and trust companies. Failures declined to 121 in February and to 46 in March. Although rising to 131 in June, they declined to 67 in September. In spite of aid granted by the RFC, 242 banks failed in January and 154 in February, 1933. Weak spots in the banking system were developing rapidly as banks were subjected to increased pressure from depositors. The attempts of banks to reduce loans and to get cash put more pressure on prices and business as goods were liquidated to pay loans. The selling of securities demoralized the bond market and increased the difficulties of the banks.

The situation of the banks in Michigan became so hazardous that a holiday was declared by the governor on February 14. The closing of the Michigan banks put heavy pressure upon the banks in the surrounding territory as corporations and others sought to obtain funds by withdrawing deposits in unrestricted banks. Indiana declared a holiday on February 23, closely followed by Maryland, Arkansas, and Ohio. The holidays spread until all banking operations were virtually suspended throughout the country by March 4.¹ On Monday, March 6, 1933, the President closed all the banks by proclamation under the powers of a wartime act of October 6, 1917, which authorized the President to regulate transactions in foreign exchange and the export or hoarding of gold or silver coin or bullion.

The presidential proclamation declaring a general bank holiday became necessary in order to put a stop to bank runs and the accompanying hoarding of cash. Only by a complete suspension could the banking situation be put into shape so that public confidence might be re-established. The holiday caused an almost complete suspension of business activity as the means of payment were shut off. The proclamation originally fixed March 9 as the last day of the holiday, but the time was afterward extended. Not only was the holiday necessary if order was to be restored for member and nonmember banks, but it also served the very useful purpose of relieving a rapidly growing strain on the reserve banks. Member banks increased their rediscounts during the latter part of February and the first week in March by \$1,170,000,000, while the reserve banks bought \$460,000,000

¹ "Federal Reserve Bank of New York," *Monthly Review*, April, 1933.

in bills and securities in the open market. Between February 1 and March 4, \$305,000,000 in gold was exported, while gold in circulation (hoarded) increased \$150,000,000 during the same period. As a result, the reserves of the reserve banks in excess of the statutory requirement declined from \$1,476,000,000 to \$416,000,000, and the average reserve ratio for the twelve banks fell from 65.6 per cent to 45.3 per cent.

On March 9, 1933, Congress enacted an Emergency Banking Act which: (1) approved and confirmed the action of the President; (2) authorized the President during any period of national emergency to regulate or prohibit foreign exchange transactions, to prohibit export or hoarding of gold and silver coin, bullion, or currency; (3) authorized the Secretary of the Treasury to call in all gold coin, bullion, or certificates when in his discretion it is necessary to protect the currency; (4) authorized the appointment of a conservator for national banks in difficulties, pending final disposition of their affairs by return to full legal status or liquidation (a certain fractional part of the deposits of banks in the hands of conservators might be classified as withdrawable and a portion restricted at the discretion of the Comptroller of the Currency, while new deposits were to be segregated and held in cash or invested in government securities and to be payable on demand without restriction); (5) set up rules for the reorganization of national banks; (6) authorized national banks to issue 6 per cent cumulative preferred stock free from liability for assessment, with preference as to assets in case of liquidation, and with such voting power as is approved by the Comptroller; (7) authorized the Secretary of the Treasury to request the Reconstruction Finance Corporation to buy or lend on preferred stock of any bank in need of capital funds; (8) authorized the issue of emergency currency in the form of Federal reserve bank notes; and (9) permitted member banks to obtain emergency aid by borrowing on their notes secured by noneligible paper (nonmember banks were given the privilege of borrowing at the reserve banks for one year by an act passed March 24, 1933).

On March 10 the President issued an executive order authorizing the Secretary of the Treasury to approve of the issuance of licenses to member banks making application to the reserve banks. It further authorized state authorities to permit the reopening of nonmember banks. On March 13, 14, and 15 the Secretary of the Treasury gave licenses to reopen member banks certified as sound by the Comptroller. State authorities did likewise. Banks certified as sound seem to have been those in

possession of sufficient assets to enable them to obtain loans at the reserve banks to pay off all depositors if necessary. The Secretary of the Treasury issued a statement in respect to the new banking act to the effect that: "This legislation makes possible the opening of banks upon a sound basis, backed by an adequate supply of currency. Through this law the banks which will open will be placed in a position to meet all demands." The restoration of a genuine stockholders' equity in the reopened banks was postponed until a later date. By March 29, 12,800 out of 18,000 banks operating before the holiday had reopened. This number included member banks carrying approximately 90 per cent of the total member bank deposits. Reopened banks were not permitted to pay out gold or gold certificates, nor were they allowed to pay out currency for hoarding. Immediately a rapid return flow of currency to the banks set in which amounted to \$1,185,000,000 by March 29. Public confidence was restored and the emergency was past.

Causes of Bank Failures

The seriousness of American bank failures has stimulated much interest in possible remedies. Such remedies must necessarily be developed in the light of basic causes of failure. In Table 47 some of the more general causes of failure among national banks can be seen.²

After 1872 it appears that the most frequently occurring causes of failure during periods free from acute or prolonged depression are wholly or partially found in dishonest and illegal banking practices (Group 2). During periods of serious depression such causes become relatively less important. The unusually low figures for the causes appearing in Group 2 after 1923 are partially due to a change in classification which excludes violation of banking laws. The importance of fraud and violation of banking laws as causes of bank failure is especially pronounced between 1900 and 1920. It is quite natural to find depression in business, and depreciation of assets for reasons other than fraud and violation of banking laws, relatively unimportant during years of prosperity.

If one combines poor management with fraud and violation of banking laws into one general class of "internal causes" and con-

²The following discussion and tables are to a large extent taken from an article by the writer in the *Journal of Business*, July, 1935, on "Bank Failures, Causes and Remedies."

trasts the magnitude of the internal causes of failure with that of the "external causes," consisting of depreciation of assets and depression, it becomes clear that the internal causes are the predominant ones in all save the depression periods. One may conclude, therefore, that a prevention of the operation of these internal causes, consisting of incompetent management, fraud, and violation of established banking law, would go far in abolishing bank failure even in bad times.

TABLE 47

CAUSES OF FAILURE OF NATIONAL BANKS †

Ratio of Number of Occurrences of Each Cause to the Total Occurrences of All Causes (in Approximate Percentages)

Years	Poor Management (1)	Fraud and Violation of Law (2)	All Internal Causes (1) and (2)	Depression and Depreciation of Assets
1865-1872	47%	32%	79%	20%
1873-1879*	26	23	49	50
1880-1889	21	41	62	37
1890-1900*	31	29	60	38
1901-1905	21	48	69	30
1906-1908	25	48	73	26
1909-1913	20	55	75	25
1914-1920	25	63	88	12
1921-1922*	23	18	41	58
1923-1929:‡				
West of Mississippi River*	31	9	40	60
East of Mississippi River, mainly in agricultural South	32	26	58	41
1930-1931*	51	1	52	47

* The starred periods contain years of severe depression. These periods show a sharp decline in fraud and illegal practices as causes of failure.

† Computed from data given in the *Annual Reports of the Comptroller of the Currency*. The data apply to all national banks placed in the hands of a receiver.

‡ Beginning 1925, the comptroller's reports classify causes of failure only as: (1) incompetent management, (2) fraud, and (3) depression. This results in a reduction of the size of Group 2 by putting violation of banking laws, excessive loans, etc., into the category of poor management.

On the other hand, during the periods of the greatest number of failures—namely, periods of acute or prolonged depression—external causes become relatively important. This was particularly true of the failures in the area west of the Mississippi River. There much distress was caused, between 1923 and 1929, by the extended depression in agriculture following the era of land speculation. Corrective measures, both legislative and administrative, necessitate a discovery of the underlying causes for fraud,

lent, weak, and inefficient management and for the susceptibility of banks to severe depression.

Relation of size to failure. An examination of Table 48 shows that on an average in the whole country, banks of larger size fared better than the smaller ones, not only before 1930 when the depression was mainly confined to agriculture but during the 1930 to 1933 period as well. This fact has caused many to conclude that an important cause of failure is found in the smallness of banks.

TABLE 48

NATIONAL BANK FAILURES CLASSIFIED ACCORDING TO CAPITAL STOCK

	1925 to 1929	Jan. 1, 1930 to Oct. 31, 1933
<i>Capital of less than \$200,000:</i>		
Total number of banks	6,491	5,414
Number of failures	424	985
Rate of failure (by per cent)	6.6%	18.2%
<i>Capital of \$200,000 to \$999,000:</i>		
Total number of banks	1,155	1,081
Number of failures	29	171
Rate of failure (by per cent)	2.5%	15.8%
<i>Capital of \$1,000,000 and over:</i>		
Total number of banks	234	213
Number of failures	1	21
Rate of failure (by per cent) .....	.42%	10.0%

The rates of failure for banks of different sizes, however, are somewhat distorted by the fact that after 1929 the agricultural areas, which contained over two-thirds of the banks with capital of less than \$200,000, were subjected to continued severe depression, more acute, in fact, than that suffered in the larger cities. A more accurate picture of the relation of size to failure may be had by computing the failure rate of banks of different sizes for each general geographical area. The results of such a computation for the period 1930 to 1933 are given in Table 49 on page 419.

The rates of failure shown in Table 49 exhibit remarkable variety. Among the national banks of New England, the failure rate grows steadily worse as banks grow in size. Among banks of the East, those in the group next to the smallest in size fared the best. Otherwise, there is little difference. In the Pacific area the second from the largest group shows no failures, while the other three groups show little difference. The three

TABLE 49

FAILURES OF NATIONAL BANKS IN DIFFERENT AREAS CLASSIFIED ACCORDING TO CAPITAL STOCK, 1930-1933

Capitalization Group	New England			East			South			Middle West			West			Pacific		
	Total Number of Banks *			Total Number of Banks *			Total Number of Banks *			Total Number of Banks *			Total Number of Banks *			Total Number of Banks *		
	Number of Failures			Number of Failures			Number of Failures			Number of Failures			Number of Failures			Number of Failures		
	Rate of Failure (By Per Cents)			Rate of Failure (By Per Cents)			Rate of Failure (By Per Cents)			Rate of Failure (By Per Cents)			Rate of Failure (By Per Cents)			Rate of Failure (By Per Cents)		
Less than \$200,000.....	242.5	5	2.1	1,287.0	167	12.2	1,158.0	230	19.9	1,402.0	378	27.0	969.0	170	17.5	350.7	56	16.0
\$200,000 to \$499,000.....	79.7	3	3.8	290.0	20	6.9	154.0	38	24.7	201.5	53	28.8	63.7	4	6.3	50.7	8	15.8
\$500,000 to \$999,000.....	23.0	1	4.3	79.0	9	11.4	44.7	16	36.3	63.2	15	23.7	9.5	1	10.5	20.5	0	0.0
\$1,000,000 and over.....	18.5	2	10.8	55.5	6	10.8	54.5	5	9.2	43.2	5	11.6	14.2	0	0.0	18.2	3	16.5

* Total number of banks is the average of the number operating at the beginning of each year 1930-1933.

great agricultural areas, the South, the Middle West, and the West, show a marked difference between the failure rates for banks with a capital of \$1,000,000 and over and for the smaller banks. Here is the reason for the favorable showing of the group of largest banks in the country-wide averages of Table 48.

The banks with capital of over \$1,000,000 in the three agricultural areas consisted of the larger banks of the largest cities of those areas. Although dependent for their prosperity upon trade with the surrounding agricultural regions, these centers were essentially industrial and commercial in nature. The type of banking business available to such banks was not unlike that of the banks of similar size in the more highly industrialized areas. In fact, the failure rate for these banks in the South and Middle West is approximately the same as that for New England and the East. The excellent record of the large banks in the West is the only exception. One is forced to the conclusion that among the national banks, size has been a relatively unimportant factor in relation to the rate of failure. Even where the largest banks show some superiority, that superiority is due to the fact that they are being compared with small banks which were more exposed to the blows of depression. It is interesting to note that in a number of instances the larger banks show a distinctly less favorable failure rate than the smaller.

TABLE 50

INDIANA BANK FAILURES, 1925-1931 *

(Classified by Size of Capital Stock)

<i>Capital Stock</i>	<i>Failures in Each Group (In Percentage of Average Number of Active Banks in Each Group)</i>
\$ 10,000- 19,999.....	19%
20,000- 29,999.....	26
30,000- 39,999.....	18
40,000- 49,999.....	22
50,000- 59,999.....	30
60,000- 69,999.....	33
70,000- 79,999.....	33
80,000- 89,999.....	50
90,000- 99,999.....	0
100,000- 199,999.....	18
200,000- 299,999.....	15
300,000- 399,999.....	28
400,000- 499,999.....	18
500,000 and over.....	12
Average for all groups	24

* *Report of Study Commission for Indiana Financial Institutions, 1931, p. 56.*

Additional evidence bearing on the relation of size to rate of failure is given in Table 50. Among Indiana banks with a capitalization of less than \$100,000, the smaller banks were frequently superior to the larger.

Failure rate of national banks and others. The failure experience of national banks has been much less serious than that of the state and private banks. Likewise, Federal reserve member banks have made a better showing than the nonmember banks. The superiority of member banks over nonmembers can be ascribed to the character of the banks which are members rather than to the fact of membership itself. This is indicated by the fact that the bulk of the Federal reserve membership is made up of national banks and the state banks located in the larger financial centers, both of which have relatively low failure rates. The suspension rates of the different types of banks during the period 1926 to 1932 are presented in Table 51.

TABLE 51

SUSPENSION RATE OF DIFFERENT CLASSES OF BANKS EXPRESSED IN
PERCENTAGE OF FAILURES TO TOTAL BANKS IN EACH CLASS *

(As of December 31 of the Preceding Year)

Year	National	State and Private	State Member	All Members	Nonmember
1926	1.5%	4.1%	2.4%	1.6%	4.2%
1927	1.1	2.9	2.4	1.3	2.9
1928	.7	2.3	1.2	.8	2.4
1929	.8	3.2	1.4	.9	3.3
1930	2.1	6.8	2.3	2.1	7.1
1931	5.8	12.0	10.6	6.4	12.1
1932	4.3	8.6	6.2	4.5	8.6

* Compiled from data appearing in the *Federal Reserve Bulletin*, for the years 1930-1933.

To eliminate the possibility of distortion of the failure rate because of the nature of the geographical distribution of the different types of banks, a comparison is made, in Table 52, for each geographical area. In each of the geographical areas, the failure experience of the national banks was better than that of the state banks. In many instances it was distinctly better. Although in all areas the failure rates of state banks were worse than those of the national banks, they were especially unfavorable in New England, the West, and the Pacific areas.

The state bank record may be attributed to two main causes. First, state bank charters have been too easily obtained by irre-

TABLE 52

COMPARISON OF FAILURES OF NATIONAL BANKS WITH OTHER BANKS BY GEOGRAPHICAL DIVISIONS, JUNE, 1929-MARCH 15, 1933
(Total Number of Banks Is the Average of the Number at the Beginning of Each Yearly Period Starting June 30)

Type of Bank	NEW ENGLAND			EAST			SOUTH			MIDDLE WEST			WEST			PACIFIC		
	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)	Average Number of Banks	Number of Failures	Rate of Failure (By Per Cents)
National banks	389	9	2.4	1,751	127	7.2	1,472	238	16.2	1,787	287	16.0	1,091	119	10.9	459	53	11.5
Other banks	693	47	6.8	1,047	230	13.9	3,679	1,136	30.8	6,415	1,924	30.0	2,457	727	29.6	774	184	23.7

sponsible and inexperienced individuals. Further, they have been issued with little regard to the actual banking needs of the community to be served. For example, in numerous instances Indiana villages of less than five hundred inhabitants boasted of two or more banks.³ The second cause is lax supervision of banks, evident in many states, because of inadequate banking laws and underpaid, overworked, and inefficient examiners.

The record of state and national bank failures shows a crying need for a unified banking system operating under Federal control. This would facilitate the prevention of overbanking re-

TABLE 53

PERCENTAGE CHANGE IN THE NUMBER OF BANKS FROM 1900 TO 1920, POPULATION PER BANK IN 1920, AND SUSPENSION RATE, 1921-1936, IN THE TEN STATES HAVING THE HIGHEST AND THE TEN STATES HAVING THE LOWEST SUSPENSION RATES *

<i>States</i>	<i>% Change in Number of Banks Between 1900 and 1920</i>	<i>Population per Bank, 1920</i>	<i>Suspension Rate, 1921-1936, per 100 Banks in Opera- tion June 30, 1920</i>
<i>10 states with the highest suspension rates:</i>			
Florida	+403.8	3,725	112.8
South Dakota	+266.5	917	83.1
Arkansas	+667.2	3,605	76.3
South Carolina	+477.5	3,709	74.4
Michigan	+ 64.0	4,236	74.4
Iowa	+ 67.4	1,242	72.3
Nevada	+371.4	12,346	69.7
North Dakota	+464.8	720	68.0
Nebraska	+103.4	1,084	65.1
North Carolina	+404.0	4,412	64.7
<i>10 states with the lowest suspension rates:</i>			
Pennsylvania	+ 59.5	5,722	30.8
Texas	+332.1	2,705	27.9
Vermont	+ 79.6	4,005	22.7
New York	- 42.7	10,795	22.2
California	+148.5	4,760	19.3
Connecticut	+ 37.0	8,522	18.7
Massachusetts	- 54.1	14,215	17.0
Delaware	+ 66.7	5,718	15.4
Rhode Island	- 50.7	18,315	12.1
New Hampshire	+ 21.2	5,539	11.3
For the United States as a whole	+118.3	3,496	49.7

* *Federal Reserve Bulletin*, December, 1937, p. 1220.

³ *Report of the Study Commission for Indiana Financial Institutions*, 1931, p. 88.

sulting from lax and competitive chartering while bringing uniformity of regulation and control. The present makeshift arrangement arising from the Federal Deposit Insurance Corporation activities cannot go to the root of the problem.

Branch banking. It would be desirable to compare the failure experience of branch banks with that of unit banks operating under similar conditions. Unfortunately, adequate data seem not to be available. However, on December 31, 1929, there were 822 branch banking systems with 3,547 branches reported as operating in the United States.⁴ During 1930 and 1931, 134 branch systems with 388 branches failed.⁵ Altogether, then, 134 branch systems out of a total of 822 operating at the beginning of the period failed during these two years, with a failure rate of 16.3 per cent. Putting it in another way, 522 out of a total of 4,369 banking offices operating under branch systems failed with a failure rate of 11.9 per cent. This may be compared with the failure rate for all national banks for the two years of 7.9 per cent, and for all state and private banks of 18.8 per cent. This scanty evidence leads one to suspect that branch banking as practiced in the United States is on the average inferior to the unit national banking system and is about on the general level of the state banks. One may add that this is not a fair test of the efficiency of genuine branch banking. Of the 388 branches involved in failures, only 113 were located outside of the home city of the parent bank, while none was able to obtain the advantages of diversification which might arise out of interstate branch banking.

Stockholders' equity in banks as related to failure. It is natural to suspect that one contributing factor in bank failures is insufficient stockholders' equity. Table 54 contains a comparison of the ratio of stockholders' equity to deposits between national banks which failed during the first ten months of 1932 and all national banks. The comparison is as of December 1, 1930, which is sufficiently far ahead of the date of the failures involved to give a fair picture.

The evidence is not at all conclusive that, one year or more before failure, the failed banks had a stockholders' equity ratio inferior to that of the average bank. The difference in the two

⁴ "Branch, Chain, and Group Banking," *Hearings of the Committee on Banking and Currency, House of Representatives*, p. 459.

⁵ Willis, H. Parker, and Chapman, John M., *The Banking Situation*, New York, Columbia University Press, p. 310, quoting from the unpublished report of the Federal Reserve Committee on branch, group, and chain banking.

groups of smaller banks is so slight as to be of little significance, while the equity ratio of the group of largest banks was actually greater for the failed banks than for all banks. This, of course, does not mean that a satisfactory ratio of invested capital is not a necessary feature of sound banking. It does indicate, however, that it will not overcome the effects of bad management.*

TABLE 54

RATIO OF STOCKHOLDERS' EQUITY TO DEPOSITS FOR NATIONAL BANKS WHICH
FAILED JANUARY 1-OCTOBER 31, 1932, AND FOR ALL NATIONAL BANKS *

(As of December 1, 1930)

<i>Size of Banks Classified According to Capital Stock</i>	<i>Number of Failed Banks</i>	<i>Stockholders' Equity to Deposits— Failed Banks (By Per Cents)</i>	<i>Stockholders' Equity to Deposits— All Banks (By Per Cents)</i>
Under \$200,000	183	15.7%	17.5%
\$200,000-\$999,000	52	14.6	16.9
\$1,000,000 and over	4	16.3	16.1

* Compiled from the *Annual Reports of the Comptroller of the Currency*.

Conclusion. The evidence presented here shows that faulty management rather than external circumstances is the major cause of bank failures. During prosperous times, fraudulent and illegal banking practices loom large among the causes of failures. During periods of prolonged depression, weak and inefficient management unable to meet the rigorous requirements of the times contributes heavily to failures. It follows, therefore, that the most fruitful remedies for bank failure must be sought in improved management. There are, naturally, two general methods of approach to the problem of improving bad bank management. The first involves the use of direct pressure; the second, the altering of the institutional framework within which bankers must function. One form of direct pressure might well consist of a requirement that all bank executives should demonstrate their possession of a minimum amount of knowledge of sound banking principles and practice by passing some form of examination. Such a plan might give rise to a body of "certified bankers," who would assist in the promotion of a professional attitude among bankers in general. In addition to such measures, there must be retained and strengthened the existing methods of ex-

* Also see Rodkey, R. G., *State Bank Failures in Michigan, 1935, Michigan Business Studies*, Vol VII, No. 2.

amination and control by public authority. The intelligent bank examiner and supervisor can very effectively improve the quality of bank management by insistence upon sound loan and investment policies, as well as by the detection of fraudulent and illegal practices.

A consideration of any alteration of the institutional framework surrounding banking activities confronts us with the question of what changes are desirable. Although it is commonly held that small banks are much more susceptible to failure than large banks, and therefore that large banking units are to be encouraged, the evidence indicates that the failure rate of large banks during the last few years is quite as great as that of small banks. An attempt to prevent failures by encouraging the development of banks of larger size cannot in itself be expected to be particularly beneficial. One benefit from such an attempt might arise from the fact that the increase in the size of banks in rural areas would necessitate the introduction of branch banking. If branch systems of the type capable of promoting diversification of loans and deposits resulted, there should be a definite gain in bank stability.

Another proposed improvement in the banking system takes the form of minimum requirements for the ratio of stockholders' equity to deposit liabilities. But the facts indicate that such requirements would be of little consequence in preventing failures. The failed banks studied generally had a ratio of stockholders' equity to deposits as substantial as that of the surviving banks and, in any event, well above the commonly suggested minimum.

Although the failure experience of state banks was considerably worse than that of national banks, membership in the Federal Reserve System appears to have been of little benefit. When one takes into account the fact that most state member banks are located in areas less exposed to depression, their superiority over nonmember banks becomes unimportant in the light of their decided inferiority in comparison with national banks. Attempts to force all state banks into membership in the Federal Reserve System appear to be of little use in preventing failures. On the other hand, very definite gains might be realized by the abolition of the dual system of chartering banks. This is true, first, because the state-chartered banks have been much more susceptible to failure than the national banks, and second, because the dual system has contributed to overexpansion of new banks during periods of prosperity. This outcome has in turn tended to increase the number of inexperienced and

incompetent bankers in the field and has resulted in excessive competition, leading to unwise banking practices. The effectiveness of public supervision could be greatly enhanced by a unified system of commercial banks under Federal control.

In both good and bad times defective bank management has all too frequently taken the form of excessive loans to the bank's own officers. This fact suggests two possibilities for improvement. First, the \$2,500 limit on loans by banks to their executive officers or to firms in which they are partners, as provided in the Banking Act of 1935, should be extended to include loans to all firms controlled in any substantial measure by such bank officers. This rule would definitely ban the doubtful practice of attempting an impartial appraisal of the banker's own credit standing and should go far toward reducing the abuses of excessive and fraudulent loans to insiders. Second, the temptation on the part of inside interests to engage in borrowing might well be reduced. An outright prohibition of all banking affiliates would be a wholesome change. This could be done with no harm to banking efficiency if branch banking barriers were abolished. Also, branch banking, in contrast with unit banking, furnishes a more adequate outlet for the energies and abilities of the capable banker and reduces somewhat the urge to develop outside business interests.

The possibilities of improvement in the management of banks seem greater under a sound branch banking system than under a unit banking system. However, the evidence indicates that branch banking as we have it in the United States has not on the average been equal to the average performance of the national banks, which are predominantly of the unit form. Branch banking, to be of any serious consequence, must be allowed to develop over wider areas than those permitted at present.

Rehabilitation of Banks

The reopening of the banks after the holiday by no means completed the task. In many communities there were no banking facilities; in others the banks in operation had little sound capital or stockholders' equity; while in some places banking facilities were inadequate to serve local needs. Finally, there was the problem of salvaging as much as possible from the banks that had failed.

Sale of capital obligations to the RFC. To strengthen the capital structure of the reopened banks, they were encouraged to sell preferred stock to the RFC (capital notes or debentures

were used where state law did not permit the issuance of preferred stock free from double liability). Such banks were first examined and were required to have a reasonable margin of owners' equity to protect the RFC's interest. Anticipated earnings were required to be sufficiently adequate to provide dividends or interest charges. When funds were advanced against capital notes or debentures or loaned against the security of preferred stock, the banks were required to give assurance that the management and the salaries would be satisfactory to the RFC while it owned any of their obligations. In the case of default on two dividends on preferred stock or failure to amortize the principal on such stock at 5 per cent per annum, the preferred stock may take control of the bank. The banks are subject to examination by the RFC while it owns any of their obligations.⁷ The RFC originally required a return of 5 per cent on stock or notes purchased with a 1 per cent rebate if retired within three years. As of July 1, 1936, it reduced the rate to 3 per cent.⁸

The larger banks were urged to lead the way in the sale of obligations to the RFC and to encourage similar action by smaller banks, many of which needed more capital funds in order to qualify for deposit insurance. On November 30, 1935, the RFC owned \$879,348,000 of preferred stock, capital notes, and debentures. The volume of such holdings has been declining as the banks have gradually retired these obligations. Capital notes, debentures, and preferred stock may not be retired unless the capital funds comprise from $\frac{1}{10}$ to $\frac{1}{4}$ of the deposits.⁹

Rehabilitation of closed banks. In many instances it seems desirable to rehabilitate a closed bank, either because of the need for its services in the community or because it offers a better way of salvaging the assets for depositors. The general principle of such rehabilitation involves the establishment of adequate sound capital in excess of the bank's liabilities to depositors. This may be accomplished by the sale of a sufficient amount of new stock, by the assessment of old stockholders, by waivers of depositors to their claims, or by a combination of methods. Two general methods have been used in rehabilitating closed banks since the holiday.¹⁰

Under what is known as the "straight rehabilitation plan,"

⁷ Upham, Cyril B., and Lamke, Edwin, *Closed and Distressed Banks*, Washington, Brookings Institution, 1934, pp. 191-193.

⁸ *New York Times*, July 13, 1936.

⁹ Upham and Lamke, *op. cit.*

¹⁰ *Ibid.*, pp. 125-134.

the existing bank is reorganized by: (1) writing off bad assets to the amount of the capital, surplus, and undivided profits; (2) a waiver of the depositors' claims by an amount necessary to bring the volume of deposits not waived down to equality with the sound assets; (3) the surrender of old shares by stockholders and a resale of these shares to them as a source of new capital funds; and (4) the sale of preferred stock to the public and to the RFC if necessary. Since the waiver of depositor claims has rendered the bank solvent, no claim for double liability can be exercised against the stockholders. The poor assets are set aside, and anything realized from them is applied to the waived deposits. Such an arrangement may be brought about, in the case of national banks, by the written agreement of persons holding two-thirds of the stock and 75 per cent of the unsecured deposits (or other liabilities), provided consent is given by the Comptroller. Depositors and stockholders who do not consent to the agreement are also bound. Upon the reopening of the bank, the unwaived portion of deposits is made available without restriction.

The second method used is known as "waiver and sale." Under it the depositors are called upon to waive their claims in excess of the amount that can be realized from a sale of the sound assets to another bank newly created. The newly organized bank purchases the sound assets and assumes the unwaived liabilities of the old bank. The unacceptable assets are transferred to a trustee, who liquidates them and applies the proceeds to payment of the waived claims. The amount available may sometimes be increased by means of a loan from the RFC against assets not sold to the new bank.

Liquidation in the absence of reorganization. A failed bank which cannot be reorganized is put into the hands of a receiver with authority to liquidate the assets and pay the proved claims. The appointment of the receiver has often proved to be a problem. Two principal methods have been used. Previous to the existence of the FDIC, the Comptroller of the Currency appointed the receiver for national banks, and the liquidation was carried on under the supervision of the experts in charge of the division of insolvent banks. Now the FDIC automatically becomes receiver for any failed national bank. Receivers for state banks were generally appointed by local courts and were answerable only to them. The more modern method of handling state bank liquidations is that used in Indiana, where the Department of Financial Institutions takes possession of a closed bank, and

its agents carry out the process of liquidation. The acts of this department, however, are subject to the approval of a court of competent jurisdiction.

The appointment of liquidating agents or receivers by the Comptroller of the Currency, by state authorities, or by local courts has been criticized on the grounds that jobs have been given on the basis of political considerations or for motives not in harmony with the best interests of the bank and the public. Liquidations are, at best, costly and wasteful. Claims against debtors are compromised when they might have been collected in full by the officers of a going bank; expenses for legal services are high. These difficulties explain in part the superior advantages of rehabilitation of a bank over a receivership even at the expense of giving up the right to enforce double liability on the stockholders. In spite of problems which arise from having agents of a central authority, instead of local persons, liquidate a bank, centralization of liquidation is a very definite advantage, since thus costs can be reduced and more experienced agents employed.

CHAPTER XXVIII

MONEY MARKET MIDDLEMEN

IN AN INTERMEDIARY position between the borrowers and the banks which furnish the funds are frequently found specialized middlemen. These middlemen fall naturally into two classes: those who assume an obligation on their own part and in some way guarantee the credit of the borrower, and those who merely act as brokers or dealers without guaranteeing the borrower's credit. In the first class are (1) stock market brokers, (2) finance companies, and (3) bill brokers (at times). In the second class are (1) the commercial paper houses, (2) dealers in Treasury bills, and (3) bill brokers. This classification is not all-inclusive, for there are factors, agricultural credit agencies, and merchants extending trade credit who are doing substantially the same thing.

Stock Market Brokers

Brokers borrow to re-lend. Although speculators who deal through stock market brokers may buy securities outright with their own funds, they commonly prefer to buy on a margin. Dealing on a margin consists of investing a sufficient amount of one's own funds to absorb any probable losses arising from a decline in security prices, and borrowing from a broker the remainder needed to make up the purchase price. The broker uses the securities so purchased as collateral for bank loans. He is therefore a middleman, standing between the lending bank and the speculator. A bank which makes brokers' loans benefits from a concentration of its security loans in the hands of a few borrowers and from the credit of the brokerage firm, which is a partnership subject to unlimited liability and regulated by the Stock Exchange.

Method of making brokers' loans. Brokers file a continuous loan agreement with the banks from which they expect to borrow, stating the terms to which any loans will be subject. Call loans

(subject to call on 24 hours' notice) may be made by direct agreement with the broker's own bank or through the money desk at the Stock Exchange. Loans made directly by the broker's bank are the last to be called when the lending bank wishes to reduce brokers' loans.

On the New York Stock Exchange, banks with funds to lend notify the clerk of the money desk. Brokers wishing funds apply at the desk, and the clerk, under the direction of the Executive Committee of the Stock Exchange Clearing Corporation, fixes the call loan rate most likely to equalize the supply and demand for funds. If the supply fails to satisfy the demand at the rate fixed, the rate will be advanced. Time loans between banks and noncustomers are arranged by money brokers, who charge a commission of about $\frac{1}{32}$ of 1 per cent of the amount of the loan.¹ Only on the New York Stock Exchange is there a genuine call loan market, since here only do banks make call loans to non-customer borrowers. Even on the New York Curb Market, the money desk appears to be unimportant. Demand loans made by banks in other cities to their own customers are not, in fact, considered subject to call. Such banks, when desiring to make genuine call loans, place them in New York City. In 1929 about one-half of the brokers' demand loans in that city were made through the money desk and hence were subject to quick call.²

Brokers' loans for others. Before 1933, banks in New York City not only lent to brokers on their own account and for country correspondents but also made loans for private individuals, firms, and corporations. Under the Securities Exchange Act of 1934, brokers dealing on registered security exchanges may borrow only from banks that are Federal reserve members or banks that are subject to the same regulations as members. Borrowing from "others" is therefore made impossible for trading in important speculative securities. This restriction was instituted because of the trouble experienced in 1928 and 1929, when attempts to restrict credit going into the stock market were largely thwarted by the large volume of loans by "others" outside the control of the Federal reserve authorities. Even before the practice was made illegal, the New York Clearing House Association had ceased to allow its members to make brokers' loans for any

¹ Beekhart, Benjamin H., ed., *The New York Money Market*, New York, Columbia University Press, 1931-1932, Vol. III, pp. 44-45, 49.

² *Ibid.*, pp. 47, 53.

persons or firms other than banks. The Banking Act of 1933 prohibits member banks from making security loans for non-banking customers.

Relation of the customer to the broker. The broker undertakes to purchase stock for the customer upon the deposit of a satisfactory cash margin. He reserves the right to hypothecate the securities as collateral for bank loans. The customer agrees to the sale of the securities at any time and without notice in case the broker is not satisfied as to the adequacy of the margin, or in case the broker's demand for payment of the loan is not immediately complied with. The customer pays interest on his debt at a rate related to the cost of money to the broker. Sec-

TABLE 55

MEMBER BANK LOANS ON SECURITIES TO BROKERS AND DEALERS IN SECURITIES
(In Thousands of Dollars)

<i>Date</i>	<i>In New York City</i>	<i>Outside New York City</i>
1928 Dec. 31.....	\$2,556,000	\$850,000
1929 June 29.....	2,025,000	921,000
Dec. 31.....	1,660,000	803,000
1930 June 30.....	2,265,000	819,000
Dec. 31.....	1,498,000	675,000
1931 June 30.....	1,217,000	515,000
Dec. 31.....	575,000	391,000
1932 June 30.....	274,000	283,000
Dec. 31.....	357,000	241,000
1938 Dec. 31.....		\$973,000
1939 Dec. 31.....		790,000
1940 Dec. 31.....		642,000
1941 June 30.....		575,000

tion 7 of the Securities Exchange Act requires the Board of Governors of the Federal Reserve System to issue regulations with respect to loans on registered, nonexempted securities. The Board issued Regulation T, governing loans by security dealers and brokers, and Regulation U, governing loans by banks. Under Regulation T, effective November 1, 1937, margin requirements on new loans are 40 per cent of the loan. Under Regulation U, also effective November 1, 1937, new loans by banks for financing the purchase or carrying of registered securities require 40 per cent margins. Loans by banks to brokers operating under Regulation T require margins of only 25 per cent of the current market value. The margin requirements apply only at the time the loan is made and not throughout its life, but if margins on a customer's account fall below the required amount owing

to a decline in the market value of securities pledged, the margin must be restored again before the customer may make any new purchases.

The Finance Company

Since 1900 a type of financial middleman has developed known as the finance company. Its functions consist of: (1) buying the receivables of business houses (accounts, notes, and acceptances); (2) advancing funds to dealers to finance the carrying of inventory; (3) advancing funds to dealers to finance retail installment sales; and (4) advancing funds against merchandise.³

The discount company. The discount company is a finance company which specializes in making advances to business firms by the purchase of their receivables. It is estimated that about two-thirds of all receivables purchased are accounts. Two methods are used: (1) Under the notification plan, the person or firm whose account is assigned is notified of the fact and instructed to pay the discount company. (2) Under the non-notification plan, the debtor is not notified of the assignment, but the discount company must rely upon the honesty of the seller in forwarding funds received from the debtor. The non-notification plan is the one most commonly used, and the discount company protects itself by reserving the privilege of inspecting the seller's books and by making a contract whereby the seller agrees to transmit the original receipts (checks, drafts, and so forth) on the day received.

Discount companies normally advance from 75 to 80 per cent of the face value of the receivables, with the remainder to be paid when the total debt is collected. The seller has a contingent liability for the ultimate collection. The receivables sold have average maturities from 45 to 60 days, but from 10 to 20 per cent are not paid when due. The charges are usually $\frac{1}{25}$ of 1 per cent per day on the net face amount of receivables bought, plus \$5 per \$1,000 on the first \$100,000 of receivables discounted within any twelve successive months. Sometimes the charge is $1\frac{1}{2}$ per cent per month on the face of the receivables. Discount companies obtain funds to an amount of several times their own capital by borrowing from local banks or in the open market on

³ A study by the Division of Analysis and Research of the Federal Reserve Board on "Finance Companies," *Federal Reserve Bulletin*, January, 1923, pp. 37-45. This study has been drawn upon extensively in the following discussion.

collateral trust notes. The collateral consists of the receivables deposited with a trustee.

The automobile finance company. Companies financing automobile dealers carry on two types of financing, wholesale and retail. Wholesale financing consists of advancing funds for carrying unsold cars. Amounts advanced are 80 to 90 per cent (sometimes more) of the wholesale price and are made against dealers' notes or acceptances secured by warehouse receipts, chattel mortgages, trust receipts, conditional sale contracts, or bailment leases. The particular types of legal instruments used to protect the finance company vary with the laws of particular states.

Retail financing involves the purchase of customers' installment notes, generally indorsed by the dealer, although in perhaps about one-fourth of the cases paper is indorsed by dealers without recourse. The bulk of the retail automobile finance paper of the large companies now bears the general indorsement of the dealer, thus giving the finance company recourse against the dealer in case the customer defaults. Customers' notes are most commonly secured by conditional sales contracts and chattel mortgages.

The National Association of Finance Companies recommended the use of conditional sales contracts in 42 states and in the District of Columbia, and the chattel mortgage in the remaining 6 states. The chattel mortgage, as used in installment sales, is void in Pennsylvania and Connecticut, while the conditional sales contract is treated as an absolute sale in Louisiana.

The average ratio of borrowed capital to owned capital is about 2.5 to 1 for the small and middle-sized companies, while larger ones at times borrow as much as five times their own capital. The customary standard practice has been to borrow by the sale of collateral trust notes secured by the deposit of dealers' notes and customers' notes with a trustee. Since 1933, finance companies have, to an increasing extent, been borrowing in the open market on their unsecured notes.* Smaller companies are often dependent upon their own banks for accommodation.

The most important single type of financing carried on by finance companies is that of the automobile trade. The experi-

* Information supplied by Milan V. Ayres, Analyst, American Finance Conference. In 1939 there were 1,066 sales-finance companies operating, of which 927 were "single city" and 139 were "multi-unit" companies. Cf. *Sales-Finance Companies and Banks' Holdings of Retail Installment Paper*, 1940, U.S. Dept. of Commerce, Bureau of the Census.

ence of companies and dealers in the United States in 1935 on installment paper is shown in Table 56.

TABLE 56

EXPERIENCE OF FINANCE COMPANIES AND DEALERS OF THE UNITED STATES, 1935*

	<i>Passenger Cars</i>	<i>Commercial Cars</i>
Average size of note purchased by finance companies:		
New cars	\$532	\$697
Used cars	238	333
"Skips" per 1,000 transactions—passenger and commercial combined†		2.4%
Percentage of repossessions:		
New cars	1.8%	10.4%
Used cars	7.8	16.0
Average loss per repossessed car:		
New cars	\$ 73	\$ 46
Used cars	93	40
Percentage ratio to total installment paper of paper over 12 mos.:		
New cars	64.3%	51.0%
Used cars	25.1	20.1
Percentage of cars sold by dealers on installments:		
New cars	58.2	55.9
Used cars	62.9	58.0

* Taken from estimates made by the National Association of Sales Finance Companies, Chicago.

† "Skips" refer to cases where buyers disappear, taking the cars with them.

The volume of retail motor sales financed on the installment plan in 1935 was 1,333,600 new cars and 1,791,900 used cars. The new-car financing amounted to \$734,100,000, and the used-car financing \$424,300,000. In addition, wholesale financing amounted to \$1,402,600,000.⁵

During 1939, sales-finance companies purchased retail-installment paper amounting to \$1,990,283,000, of which 74.5 per cent, or \$1,483,803,000, was to finance the sale of automobiles. The large degree of concentration in the business is shown by the fact that 927 single-city companies accounted for only \$257,055,000 of the total, while the 159 multi-unit companies handled the remainder. Commercial banks began to enter the field, and at the end of 1939 they held 28.6 per cent of the total amount of retail installment paper in the market.

Economic reasons for finance companies. Finance companies advance funds to concerns and individuals who are unable to find accommodation at banks. The banks benefit by the credit

⁵ *Time-Sales Financing*, April, 1936, p. 7.

of the finance company, which stands between the borrower and the bank. The reasons for the use of finance companies are: (1) the credit risk of the borrower does not meet the requirements of the bank; (2) the loans may have longer maturities than the banks desire; (3) installment sales must be carefully watched and involve occasional repossession and resale; and (4) the affairs of the borrower require careful supervision if loss is to be avoided. The bank which buys finance company paper is free from the risk and the very considerable work of analyzing and watching the borrower's credit standing. Instead, this task has been forced upon the finance companies as the price for getting their paper sold to the banks.

Finance companies are expensive means of obtaining working capital, and obviously business firms which must resort to them are at a disadvantage as compared with those able to obtain loans directly from the banks. The cost is comparable to that of obtaining trade credit under the common 2 per cent discount for cash. Likewise, installment purchases by consumers are made expensive, since heavy interest and service charges are added to the unpaid balance.

Dealers in Bankers' Acceptances

The acceptance market. Bankers' acceptances have already been described, and the importance of the Federal reserve banks in the establishment and maintenance of the market for acceptances has been considered. The market cannot operate, however, without specialists who act as intermediaries between sellers of acceptances and investors in them. These intermediaries are the acceptance dealers, who may be individuals, firms, or corporations.

The acceptance dealer.* The dealer scrutinizes the bills offered and may by his indorsement add to their acceptability. He must have wide contacts with investors who buy bills, and he must have sufficient capital, whether owned or borrowed, to enable him to carry a large and diversified portfolio. He obtains his bills (or acceptances) from several sources. His most important single source is the accepting banks which have discounted their own acceptances for the owners instead of forcing them to seek an independent market. About one-half of the bills bought by dealers in New York City are obtained directly from accepting

*This discussion is based mainly upon a study on "Dealing in Acceptances," in the *Federal Reserve Bulletin*, October, 1921, pp. 1166-1170.

banks, and the proportion is still greater for dealers in Boston and Chicago.⁷

Acceptance dealers usually buy the bills outright and rely for their main profit on selling at a lower rate of discount than that at which they buy. They operate extensively on borrowed funds. Most of them are also dealers in commercial paper, stocks and bonds, long- and short-term government obligations, and "Federal funds." They are therefore established firms possessing capital stock devoted to other uses, and commonly invest little of their own funds in acceptances. From 85 to 100 per cent of their portfolio may be carried on funds obtained in the call loan market. Their market consists mainly of banks in the larger cities, with which they keep in contact by salesmen, telegraph and telephone, and circularization.

Since the dealers borrow the bulk of their funds, the cost of funds in relation to the yield on the portfolio of acceptances has a special bearing on the profit to be realized. Call money rates are usually very close to the acceptance rate, so that the dealer expects to make little, if any, profit out of the difference. At times the call rates rise above the acceptance rate, with the result that the dealer is compelled to liquidate quickly to avoid loss. Under such circumstances the reserve banks come to the rescue with their 15-day repurchase agreements. At times a fairly large percentage of dealers' portfolios is carried under resale agreements; this has been particularly true in New York City. The reserve banks charge rates of discount equal to their ordinary buying rates on similar bills. The rates are fixed with an eye to assisting the dealer to avoid loss. If dealers are not in need, the rate will be fixed at a level above the open-market rate on bills. If dealers need help, the reserve banks lower their buying rates somewhat below the rate at which dealers sell, so that dealers will not lose.

Dealers "recognized" by the Federal reserve banks are those whose indorsement is sufficient to satisfy the reserve banks when buying for their own account or for foreign correspondents or is adequate to protect the bank in entering into resale agreements. Ten recognized dealers were listed in answers of the reserve banks to questionnaires sent to them during the Senate hearings on the subject: "Whether a dealer's indorsement is recognized or not depends on the possession of a substantial net worth in relation to the business transacted; the experience and

⁷ "Operation of National and Federal Reserve Banking Systems," *Hearings*, *op. cit.*, pp. 926-935.

ability of the management; his clientele; character of transactions; rapidity of distribution; his willingness to bid for bills and to circulate at frequent intervals a list of offerings.”⁸

Since bills sold to the reserve banks must be satisfactorily indorsed, dealers offering bills obtained directly from the accepting banks must indorse them. If a bill has previously been held by a bank for investment and has been indorsed and sold to the dealer, the dealer's indorsement is not necessary. Indorsed bills sell at $\frac{1}{8}$ of 1 per cent under the rate for unindorsed bills. At the end of 1930 the Discount Corporation of New York, one of the largest dealers in acceptances, having a capital of \$9,800,000, was contingently liable on indorsements for \$129,000,000.⁹

*The Commercial Paper Market*¹⁰

Commercial paper. Open-market commercial paper is a valuable aid to liquidity and diversification for the banks of America. It is especially important for the smaller unit banks whose local loans must be made to a narrow range of industries. It is also useful to banks which have seasonal excess funds for investment. It facilitates industrial and geographical diversification, and, because of its variety of denominations and maturities, it helps the individual bank to arrange a suitable portfolio of liquid assets. The paper of good firms has an enviable reputation for prompt payment at maturity and is normally eligible for rediscount when within three months of maturity.

Denominations vary from \$2,500 to \$50,000, with \$5,000 as the most common denomination. The size offered is determined by the requirements of banks which are in the market to buy at any particular time, since commercial paper so bought is subject to the 10 per cent limit. The bulk is unsecured single-name paper, although some paper is indorsed and a small amount is secured by collateral.¹¹ The maker is normally the payee who has indorsed the paper in blank. The paper thus becomes payable to bearer and requires no further indorsement to pass title.

⁸ *Hearings, op. cit.*, p. 848.

⁹ Beckhart, *op. cit.*, p. 381.

¹⁰ The material in this section was very largely taken from a study by Steiner, W. H., of the Division of Analysis and Research of the Federal Reserve Board, published in the *Bulletin* in August and September, 1921, pp. 920-926, 1052-1057. A good account of the commercial paper market appears in Beckhart, Benjamin H., *The New York Money Market*, Vol. III.

¹¹ Eighty per cent is estimated to be paper of commercial and industrial firms, of which five-eighths is unindorsed. Twenty per cent is collateral trust paper of finance companies and other financial middlemen. See Foulke, Roy A., *The Commercial Paper Market*, Cambridge, Bankers Publishing Co., 1931, pp. 7-10.

CHAPTER XXIX

AGRICULTURAL CREDIT

SINCE the beginning of the twentieth century, the credit problems of the American farmer have become more pressing, partially as a result of rising land values following the disappearance of free land, and partially because of the increased intensity of cultivation, which requires larger amounts of working capital. It is ordinarily said that the farmer requires three separate types of credit: (1) long-term mortgage credit to purchase land; (2) intermediate-term credit (running from six or nine months up to three years) to finance the purchase of fertilizer, stock for feeding and breeding purposes, equipment, and improvements; and (3) short-term credit of not over nine months to purchase seed and feed, and to finance the storage of crops awaiting market.

The farmer's credit needs are increased by the fact that it is generally impossible for him to incorporate and get capital by the issue of securities. He must, therefore, depend upon what capital he owns and can muster by borrowing to provide the relatively large amount of funds required in agriculture. Being a small-scale borrower engaged in a highly risky enterprise, he must, for the most part, borrow locally where capital is normally scarce and dear. Rates as high as 10 to 15 per cent have been common in some districts.¹ Long-term mortgage credit has been obtained: (1) from local money lenders; (2) from mortgage loan companies; and (3) from banks and insurance companies. Before 1914, national banks were not permitted to lend on real estate mortgages, but the Federal Reserve Act permitted those outside of central reserve cities to make five-year loans on farm land. State banks, on the other hand, have generally been allowed to lend on real estate, and farmers have obtained credit

¹ Baird, Frieda, and Benner, Claude, *Ten Years of Federal Intermediate Credits*, Washington, Brookings Institution, 1933, p. 22.

from that source. For shorter-term credit the farmer in the past has relied upon: (1) merchants or dealers, who in turn obtained credit directly or indirectly from city banks; and (2) local banks. In either case, the cost was frequently high.²

Long-Term Credit Institutions

The Federal land banks.³ The first important attempt made to improve the farmer's credit facilities was made in 1916, when Congress authorized the organization of twelve Federal land banks to have a minimum capital of \$750,000 each. The capital was originally subscribed by the Federal Treasury, but national farm loan associations become stockholders by virtue of the fact that they must subscribe to stock in amounts equal to 5 per cent of the loans made at the land banks. When the loan associations buy enough stock, the government holdings are retired.

National farm loan associations. If not less than ten persons wish to borrow from a Federal land bank, they may organize a national farm loan association. Each association elects a board of directors of at least five members, who choose a secretary-treasurer and a loan committee of three. Its application to the Farm Credit Administration for a charter includes an affidavit stating that each of the organizers is the owner, or about to become the owner, of farm land qualified as a basis of a land bank loan, and must be accompanied by a subscription to stock in the land bank equal to 5 per cent of the desired loans. Once the association is set up, a new borrower applies for membership and subscribes to stock in the association to an amount equal to 5 per cent of his prospective loan. He may become a member upon a two-thirds vote of the directors. The borrower's application is referred to the loan committee, which appraises the land and makes its report. If it is unanimously approved by the loan committee and by the directors, a report to that effect is sent with the application to the land bank, which may grant the loan on further investigation.

Security for loans made at land banks. The local loan association indorses the member's note before it is sent to the land bank. This indorsement acquires value from the fact that the

² *Ibid.*, p. 19.

³ At the time when the Federal land banks were organized, provision was made in the law for the organization of privately owned joint stock land banks with powers and privileges similar to those of the Federal land banks. The unfortunate experiences of some of the joint stock land banks tended to discredit the system. The Emergency Farm Mortgage Act of 1933 provided for a termination of their functions and for their liquidation.

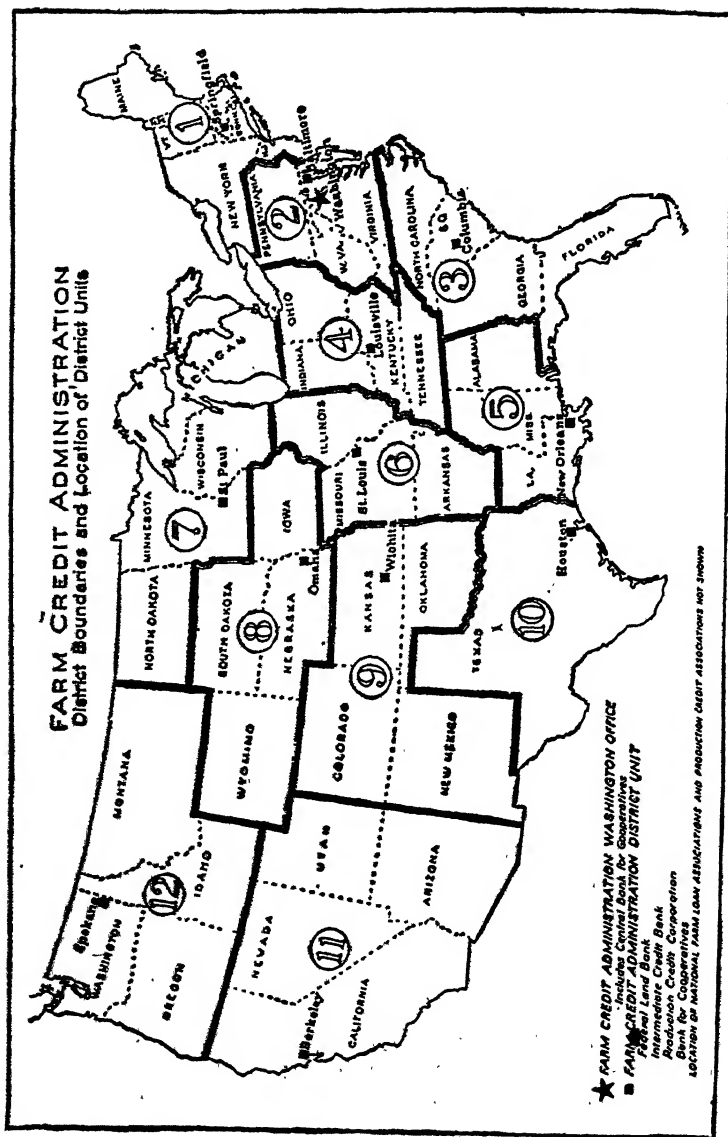


CHART 15.

association owns stock in the land bank equal to 5 per cent of the total loans. This stock is purchased out of the proceeds of the sale of a like amount of its own stock to its members. Moreover, members of the association are doubly liable on their stock ownership for all debts of the association incurred before 1933. Since this equity provides the basis for the liability of the member borrowers, it furnishes an essential element of co-operative credit and should make for interest on their part in the soundness of loans extended.

In addition to the association indorsement, the loan must be secured by a recorded first mortgage on land within the district and must not be over 50 per cent of the appraised value of the land itself, plus 20 per cent of the value of permanent insured improvements. The loan must provide for amortization of principal and payment of interest so as to extinguish the debt in from 5 to 40 years. In addition, the whole or any part of the debt may be paid after five years. The rate of interest cannot be more than 1 per cent above the rate on the last issue of land bank bonds. Only persons actually engaged, or about to become engaged, in the cultivation of the mortgaged land can borrow. The purposes of such loans may be: (1) to buy agricultural land, equipment, fertilizer, and livestock; (2) to make improvements on farm land; (3) to liquidate the indebtedness of the owner incurred for agricultural purposes; and (4) for general agricultural purposes.

Emergency status of national farm loan associations. The heavy demands for refinancing loans at the land banks since 1933 have resulted in a short-circuiting of the local associations in two ways. (1) Beginning August, 1933, applications for loans were received directly by the land banks without previous approval by the local associations. This situation arose from the fact that many applications for loans were of the sort not eligible to be handled through the regular land bank channels. Those finally approved, however, required the ultimate approval and indorsement of the association if the loans were to be made through it. (2) In cases when a borrower does not have access to borrowing through an association, the land bank may make a direct loan, carrying a rate of interest $\frac{1}{2}$ of 1 per cent higher than that paid by borrowers through associations. The borrower must subscribe to stock in the land bank to an amount equal to 5 per cent of his loan. If a direct loan borrower joins an association later, he benefits by a corresponding reduction in interest.

Attempts are now being made to return the local associations to their previous position in respect to land bank loans. This reversion is necessary if the co-operative character of these loans is to be maintained. The local associations are required to set aside, semiannually, 10 per cent of their net earnings until the reserve account equals 25 per cent of the capital stock, and 5 per cent thereafter.

As an additional means of strengthening the position of the national farm loan associations, it has been the policy of the Farm Credit Administration, wherever possible, to require the local farm loan associations to handle the local problem of servicing loans made through them. This procedure serves the double purpose of focusing the attention of the local officials of the associations on the problems and responsibilities which accompany co-operative credit and of providing them with an income derived from the fees paid by the Federal land banks for the service. On December 31, 1939, out of the 3,722 operating national farm loan associations, 3,486 were servicing their loans.

Because of the impairment of capital due to depression losses, many national farm loan associations were compelled to become inactive, that is, were unable to make additional loans for members. In 1937, an amendment to the Farm Credit Act permitted the land banks to loan to farmers through these associations with impaired capital. To accomplish this, new and old borrowers are separated, and there is no inter-group liability save for operating expenses of the association.

Source of land bank funds. The Federal land banks obtain part of their capital from government subscription and the remainder from the local loan associations and direct borrowers. On December 31, 1939, their combined capital was \$236,475,965, 52 per cent of which was owned by the government. The bulk of the land bank funds are obtained by the sale of consolidated bonds which are exempt from Federal, state, and local taxation and are the obligation of all twelve Federal land banks. Collateral security consists of farm mortgages held in trust. Each land bank is required to set aside 50 per cent of its semiannual net earnings until its reserve account equals its capital stock.

Emergency financing by land banks. On January 23, 1932, the law was amended to permit the Secretary of the Treasury to subscribe to \$125,000,000 additional stock in the land banks to strengthen their capital structure. Relief to borrowers already in debt to the land banks was extended in 1933 by further amendments to the law which: (1) permitted needy borrowers

to postpone (within five years) any installments, with interest on the unpaid amounts accruing at simple interest at the regular rate; and (2) reduced the maximum interest rate to $4\frac{1}{2}$ per cent for five years. To offset any loss in the land bank revenue, the Secretary of the Treasury was required to subscribe to the surplus accounts of the land banks. The maximum amount of any individual's loan was raised from \$25,000 to \$50,000 with the approval of the Land Bank Commissioner.

Advantage has been taken of the low interest rates of the 1930's to refund land bank bonds. This has made possible reduction in interest rates on loans to farmers without putting the whole burden of the reduction upon the United States Treasury. During 1939 the remaining Federal land bank bonds, issued by individual land banks and bearing $4\frac{1}{2}$ per cent interest, were retired. The consolidated issues which replaced them bear coupon rates varying from 3 to 4 per cent.

In 1941 the contract rate on farm loans made through the national farm loan associations was 4 per cent and the contract rate on loans made direct to farmers by the land banks was $4\frac{1}{2}$ per cent. However, by act of Congress the actual rate to be paid by farmers on the national farm loan association loans was reduced to $3\frac{1}{2}$ per cent and on direct loans to 4 per cent. These low rates were to be in force until July 1, 1942. Because this low rate of interest requires the Treasury to make up losses by the land banks, farmer borrowers are the beneficiaries of a government subsidy on their long-term credit.

To give relief to farmers in debt to other institutions or individuals, the land banks were authorized to purchase first mortgages on farms either for cash or by exchanging farm loan bonds for them, paying no more than 50 per cent of the "normal value" of the land and 20 per cent of the value of the permanent improvements. The mortgages were refinanced under the favorable existing land bank loan terms on the basis of the amount paid by the land bank. The borrower whose mortgage was bought obtained relief in lower interest and the opportunity for postponement of payment for five years; in addition, he often stood to gain by a scaling down of the debt required to bring the face amount of the loan below 50 per cent of the normal value of the land and 20 per cent of the value of the improvements. Two difficulties arose in the execution of this program. First, creditors could not be compelled to sell their mortgages, and hence relief to debtors in good standing with the creditors was impossible to arrange unless the creditor was hard pressed for

liquidity. Otherwise, creditors preferred a good mortgage to cash or the low-interest-bearing bonds offered in exchange. Second, if the land bank were to offer an attractive enough price to interest the creditors holding a mortgage in default, the *normal value* had to be stretched considerably above the existing land values of 1933 to 1934.

Emergency financing by the Land Bank Commissioner. Since many farmers' debts were in excess of the amount which could be financed through regular land bank loans, the Land Bank Commissioner was authorized to lend on first and second mortgages on both real and personal property to an amount (including any prior indebtedness) equal to 75 per cent of its normal value. Such loans might not exceed \$5,000 and must be amortized over not more than ten years if secured by personal property. These loans were for: (1) refinancing past debts; (2) providing working capital; and (3) providing funds for the farmer to exercise his equity of redemption or to repurchase land lost by foreclosure. The contract rate on Commissioner's loans in 1941 was 5 per cent. However, the actual rate until July 1, 1942, was fixed by act of Congress at $3\frac{1}{2}$ per cent.

The Federal Farm Mortgage Corporation. The Federal Farm Mortgage Corporation is a government-owned corporation, organized in 1934 and permitted to issue up to \$2,000,000,000 in bonds fully guaranteed by the government. The bonds have been: (1) sold to obtain funds for Land Bank Commissioner loans; (2) sold to furnish the land banks with cash at times when their own unguaranteed bonds would not command a good market; and (3) exchanged for the less marketable land bank bonds and used by the land banks in the purchase of mortgages by direct exchange.

Other emergency agricultural loans. As early as June, 1929, an Agricultural Marketing Act was passed, setting up the Federal Farm Board, equipped with a \$500,000,000 revolving loan fund out of which loans might be made to co-operative marketing associations and stabilizing corporations. These loans were made to finance the storage and marketing of agricultural commodities and to control crop surpluses. The Board was also authorized to "insure" co-operative associations against any decline in the prices of products held.

On May 19, 1932, the Reconstruction Finance Corporation was authorized to create in any land bank district a regional agricultural credit corporation with a capital of at least \$3,000,-

000 and authority to make agricultural loans and to rediscount the notes obtained, when eligible, at the Federal reserve banks or the intermediate credit banks. In 1933 the government organized the Commodity Credit Corporation to make loans to agricultural producers against commodities in storage. In addition, Congress has regularly authorized either the Secretary of Agriculture or the Farm Credit Administration to extend small loans to farmers in drought- and storm-stricken areas.

Intermediate Credit

To improve the acceptability of farmers' notes (in excess of nine months' maturity) given to obtain working capital, the government, under an act of March 4, 1923, established twelve intermediate credit banks. These banks are located at the same places and have the same management as the Federal land banks. The stock of each is at least \$5,000,000 and is owned by the government. One-half of the net earnings are to be carried to surplus until it equals the subscribed capital, and thereafter 10 per cent is carried to surplus. The remainder of the net earnings go to the government. These banks may issue tax-free debentures, secured by discounted paper, to an amount not over ten times the paid-up capital and surplus. All intermediate credit banks are indirectly liable for these debentures. These banks may rediscount or purchase agricultural paper of not more than three years' maturity held by banks, agricultural credit corporations, livestock loan companies, or co-operative credit and marketing associations, and may make loans secured by such paper. They may also make direct loans to agricultural co-operative associations up to 75 per cent of the value of warehouse receipts, shipping documents, and mortgages on livestock offered as collateral.

The interest rate charged by the Federal intermediate credit banks may not exceed the rate on their debentures by over 1 per cent. Paper is not eligible to be offered to the intermediate credit banks for discount or collateral if the maker is charged a rate more than 3 per cent in excess of the discount rate of the intermediate credit bank unless a wider spread is approved by the Governor of the Farm Credit Administration.

Improved Short-term Credit Facilities

Production credit corporations. The farmer, particularly in the West, has always borrowed at a disadvantage. The collapse

of commercial banks in the agricultural areas increased these difficulties and in many instances shut off completely his contact with sources of credit. The government stepped in with emergency loans, made both directly and indirectly through the RFC's regional agricultural credit corporations. But permanent improved short-term credit facilities for agriculture were required, and in answer to this need, production credit corporations and production credit associations were provided in 1933. There are twelve production credit corporations, each located at the same place as the land bank and intermediate credit bank of its district, with a combined capital of \$120,000,000, which belongs to the government. The production credit corporations purchase Class A Stock in the production credit associations in an amount equal to approximately 20 per cent of the loans which the association is expected to make. Class A Stock is nonvoting but is preferred as to assets. The production credit corporations formulate regulations governing management, credit policies, and accounting and office procedures for the production credit associations.

The production credit associations are local lending units, operating co-operatively. Their members purchase Class B Voting Stock (one member has one vote) to an amount equal to 5 per cent of their loans. The associations make short-term (up to one year) loans to farmers. Their capital funds are invested in approved securities, which are in turn pledged as marginal collateral with the intermediate credit bank when the association offers borrowers' indorsed paper for discount or as collateral for loans. Borrowers may not be charged a rate more than 3 per cent in excess of the discount rate of the intermediate credit bank unless specifically permitted by the Governor of the Farm Credit Administration. In 1939, when the intermediate credit banks reduced their loan rate to the production credit associations to 1½ per cent, the rate charged farmers was reduced to 4½ per cent. The loans of these associations are being substituted for the loans of the regional agricultural credit corporations now in liquidation.

Several distinct advantages are claimed for the work of the production credit associations. Not only do they provide adequate credit at low rates to farmers where local banking facilities are inadequate or when the farmers' credit position will not satisfy the banks, but also they are setting new and improved standards in short-term agricultural credit practices. Their budgeting of farmers' credit needs and his ability to repay out

of income, instead of an exclusive dependence upon collateral, represents a step in the right direction.

The size of loans made by the production credit associations is, on the whole, small. The minimum-sized loan is \$50, and about one-half of all loans maturing in 1939 were for less than \$450. The 529 active production credit associations on March 31, 1941, had outstanding loans of \$195,296,000. Comparing this figure with the agricultural loans of insured banks of \$1,280,000,000 at the same date indicates that the short-term agricultural credit business is by no means in immediate danger of being monopolized by the production credit system.

For convenience of borrowers needing small amounts, each production credit association carries a cash fund out of which the loan committee may advance funds without waiting until the borrower's note can be sent to the intermediate credit bank for discount. Of total loans outstanding at the end of 1939, 84.5 per cent represented paper rediscounted at the intermediate credit bank, while 15.5 per cent was carried in the cash loan funds.

The banks for co-operatives. To care for the needs of agricultural co-operatives, a Central Bank for Co-operatives and twelve district banks for co-operatives have been set up. The Central Bank lends to national or regional farmers' co-operatives, while local co-operatives are cared for by the district banks. The capital stock of these banks was obtained from the revolving fund established under the Agricultural Marketing Act of 1929. Borrowers subscribe to stock to 5 per cent of the amount of their loans. The lending powers of these banks are now extended to include loans to co-operatives furnishing farm services (such as mutual insurance companies); loans for purchasing, testing, grading, distributing, or furnishing farm supplies; and loans for marketing farm products.

Management of the farm credit system.⁴ The farm credit system is under the control of the Farm Credit Administration created May 27, 1933. This Administration is the successor to several other organizations and was set up to give uniform centralized control. It has control over the land banks, the Land Bank Commissioner loans, the intermediate credit banks, the production credit system and the banks for co-operatives, the Federal Farm Mortgage Corporation, and emergency crop and seed loans.

⁴For a good account of the present farm credit system, see the study sponsored and published by the American Institute of Banking, *Farm Credit Administration*, 1934.

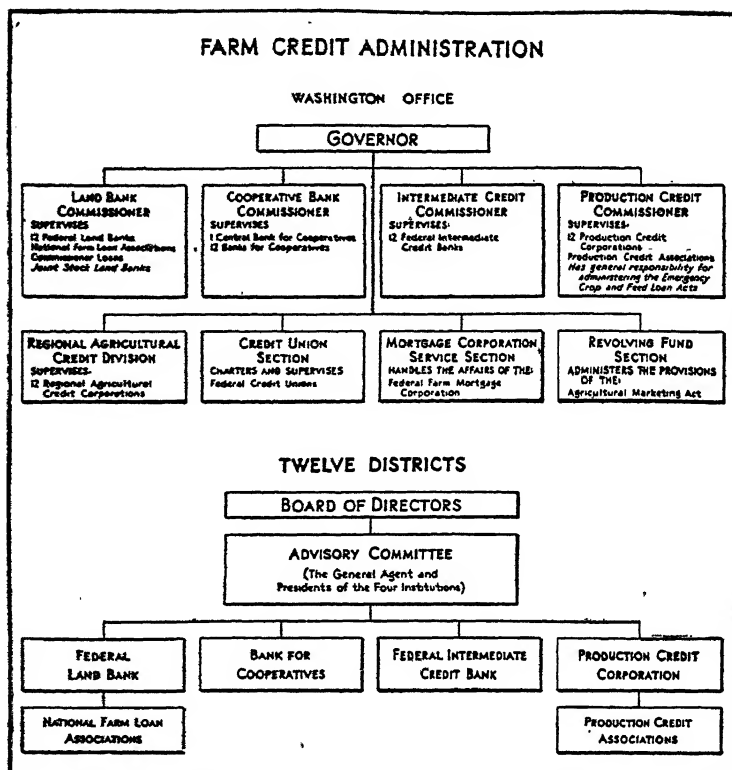


CHART 16.

Economic importance of a Federal-sponsored credit system. The magnitude of the loans of the farm credit system may be seen from Table 57. The system as it now stands is heavily subsidized by the Federal Government. In addition to its investment in purely emergency lending agencies, the government, at the end of 1935, had an investment of almost \$500,000,000 in agencies intended to be permanent in nature. Some of this investment will be withdrawn as borrowers increase their ownership and the agency takes on more of the characteristics of true co-operative credit institutions. A heavy initial investment by the government to furnish a stockholders' equity as a basis for borrowing was necessary if a co-operative credit agency of sufficient size to be effective was to be established. But it is important that the government interests be maintained at the lowest level compatible with the best functioning of the farm credit system if it is to become self-supporting and powerful enough

TABLE 57

NUMBER AND AMOUNT OF FARM CREDIT ADMINISTRATION LOANS
OUTSTANDING MARCH 31, 1941 *

<i>Institution</i>	<i>Amount</i>
Farm mortgage loans:	
Federal land bank loans	\$1,866,697,000
Land Bank Commissioner	659,016,000
Total	\$2,525,714,000
Short-term credit:	
Production credit associations	\$ 194,558,000
Emergency crop loans	126,522,000
Drought relief loans	51,383,000
Regional agricultural credit corporations	7,009,000
Federal intermediate credit banks to private financing institutions	41,040,000
Total	420,512,000
Loans to co-operatives:	
Federal intermediate credit banks	\$ 351,000
Banks for co-operatives	73,132,000
Agricultural Marketing Act revolving fund	15,739,000
Total	89,222,000
Grand Total	\$3,035,448,000

* Farm Credit Administration, *Monthly Report on Loans and Discounts*, March, 1941.

to be anything more than a channel for mere governmental aid. The expansion of the various classes of agricultural loans after 1933 may be seen in Chart 17.

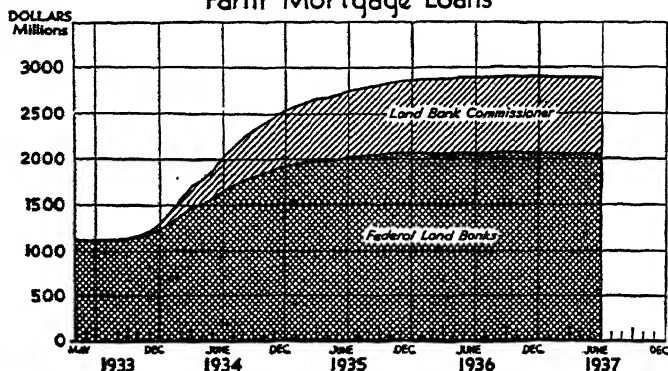
The advantages to the farmer of co-operative credit include: (1) access to the best money markets through the increased scale of borrowing; and (2) lower rates due to the diversification of risk and protection arising from the co-operative liability feature. Government control helps to insure necessary management of proper quality.

The development of the farm credit system may have profound effects upon the problems of the rural banker. It is not necessary that it monopolize the extension of farm credit, but merely that it supplement existing sources of credit in order to be of real service to the farmer. Bankers, however, feel that it presents a form of competition which is difficult to meet. The fact that the government furnishes a substantial part of the owners' capital and yet does not require any return is one source of unfair advantage. Another cause for complaint is found in the fact that obligations of the farm credit agencies offered in the market

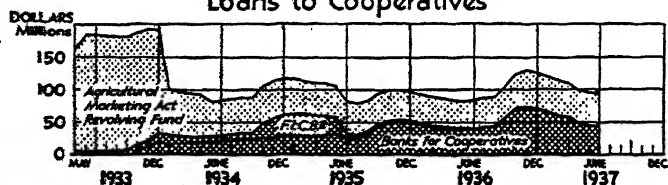
FARM CREDIT ADMINISTRATION LOANS OUTSTANDING (at End of Each Month)

Permanent Institutions
 Emergency Institutions
 Institutions in Liquidation

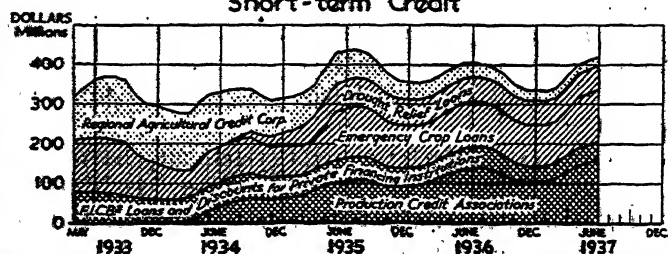
Farm Mortgage Loans



Loans to Cooperatives



Short-term Credit



FARM CREDIT ADMINISTRATION

DIVISION OF FINANCE AND RESEARCH PL 10179

CHART 17.

for investment are exempt from Federal, state, and local taxation. In the face of this competition, private lenders must in many instances be content with a smaller rate of return than heretofore. The country banker must choose between purchasing the obligations of the credit agencies (such as land bank bonds and intermediate credit debentures) and aggressively meeting the competition locally on its own grounds. There is evidence that he can meet this competition successfully in some cases at least. Production credit loans, for example, cost the farmer more than the rate of interest charged on the loan. An inspection fee must be paid by the applicant for a loan. This amounts to at least \$3 and is a little less than 1 per cent of the face of loans under \$1,000. Added to this is the application fee of \$.50, an abstract fee of about \$.50, and a mortgage filing fee of \$.60. Further, the borrower must tie up 5 per cent of his loan in stock in the association. If a borrower requires \$500, the incidental costs, including the interest on \$25 invested in the stock of the association at $4\frac{1}{2}$ per cent, would be about \$7.70. The rate of interest charged (1941) is $4\frac{1}{2}$ per cent. The total cost of borrowing \$500 for one year would be about \$32.85, bringing the cost of the loan up to 6 per cent per year. In addition, the borrower sometimes must wait about two weeks from the time he makes application before the funds are forthcoming. Under these circumstances local banks should not have any great trouble in obtaining the cream of the short-term farm loan business if they wish it.

CHAPTER XXX

PRICE MOVEMENTS AND THEIR CONSEQUENCES

The Measurement of Price Changes

THE central theme in the study of monetary problems is the behavior of prices. Some method of measuring average price movements is needed both for analyzing causes and as guides in the attempt to modify and control the movement of prices. The basic monetary problem, as it relates to economic welfare, arises from the difference in the pace and magnitude of changes which occur among prices of different types. The cost of living of wage earners, wholesale prices, agricultural prices, and durable goods prices, to mention a few, show considerable divergence in their movements. Index numbers which measure particular groups of prices are, therefore, of vital importance if factual data are to be used to enlighten the study of monetary problems.

The index number as a device for measuring price movements. The index number is a device which permits measuring the average behavior of a number of individual prices. Its practical usefulness derives from the fact that prices have some tendency to cluster together so that a movement in the price index may be taken as indicative of a similar movement in the bulk of the particular prices which are included in the index. If a price index be made too broad and all-inclusive, so that it averages too wide a variety of prices, its movements will show but little of practical use in respect to relative movements of different types. It is this relative movement of prices which is important. A broad index, such as Snyder's general price index, conceals important relative movements of the several groups of prices, and for this reason has less practical value than the more specialized types of index.

The choice of prices to be measured. The use to be made of an index number must largely govern the particular group of commodities whose prices are to be measured. For example, if

the need is for a measure of changes in the cost of living of workmen, the index must be based upon such things as the retail cost of food, clothing, shelter, and fuel of the type used by such individuals. Not only will such an index contain a somewhat different list of commodities from that of an index designed to measure living costs of business and professional groups, but it will also differ for workmen in different geographical areas. On the other hand, if the price index is designed to measure price changes most important to the profit prospects of businessmen, it must be based largely on the prices of commodities at wholesale. Such an index is fairly sensitive to cyclical change and is, therefore, of more use than cost-of-living index numbers for discovering cyclical developments. Of even greater use for discerning cyclical price changes is the special group of commodities whose prices are sensitive to cyclical changes in business. Such commodities include farm products, rubber, silk, crude petroleum, and the like. Index numbers of prices of such raw materials are, therefore, highly sensitive to cyclical change. Students of the problem of international trade, on the other hand, are concerned with the behavior of price indexes of imported and exported goods.

Numerous specialized index numbers are used to measure the changing price trends for narrow groups of commodities. Such specialized indexes are of interest both to businessmen whose economic welfare is bound up with the behavior of such prices and to students of general business fluctuations. The latter are especially interested in the relative movements of different groups of prices as they bear upon the basic economic situation. The multiplicity of such specialized index numbers of prices may be seen by examining the list which is currently carried by the *Federal Reserve Bulletin*. Index numbers of wholesale prices published in the *Bulletin* are compiled by the Bureau of Labor Statistics, and are constructed for separate groups of commodities and combined into a general wholesale price index based upon 784 separate commodities.¹

¹ Groups and sub-groups of commodities entering into the Bureau of Labor Statistics wholesale price index and for which separate index numbers are published:

Farm products	Foods
Grains	Dairy products
Live stock and poultry	Cereal products
Other farm products	Fruit and vegetables
	Meats
	Other foods

Measuring the purchasing power of money. Both theoretical and practical difficulties are presented by any attempt to make an index number which properly measures the purchasing power of money in a broad sense.² Theoretically, there is the question of what, precisely, should be the prices covered by such an index. It is sometimes argued that the most significant index of the purchasing power of money is one which would include only prices of things which enter into *final consumption*, weighted in proportion to the amount of money income spent for each by the consuming public.³ Thus, prices of capital goods, securities, real estate, goods at wholesale, and the like, would be excluded, for they do not constitute a part of the consumers' goods purchased by the public. The justification for such a view rests on the belief that greater significance attaches to changes in the buying power of the consumer's dollar than to changes in the buying power of money held by businessmen. On the other hand, a case may be made for the creation of a comprehensive index embodying the prices of everything bought or sold by the use of money. Such an index number measures the purchasing power

Hides and leather products	Building materials
Shoes	Brick and tile
Hides and skins	Cement
Leather	Lumber
Other leather products	Paint and paint materials
Textile products	Plumbing and heating
Clothing	Structural steel
Cotton goods	Other building materials
Knit goods	
Silk and rayon	Chemicals and drugs
Woolen and worsted goods	Chemicals
Other textile products	Drugs and pharmaceuticals
Fuel and lighting materials	Fertilizer materials
Anthracite	Mixed fertilizers
Bituminous coal	
Coke	Housefurnishing goods
Electricity	Furnishings
Gas	Furniture
Petroleum products	
Metals and metal products	Miscellaneous products
Agricultural implements	Auto tires and tubes
Iron and steel	Cattle feed
Motor vehicles	Paper and pulp
Nonferrous metals	Rubber, crude
Plumbing and heating	Other miscellaneous products

² The price index is the reciprocal of the purchasing power of money over these commodities included in the index.

³ Cf. Keynes, J. M., *Treatise on Money*, New York, Harcourt, Brace & Co., 1930, Vol. I, pp. 54, 57-58.

of money for *all uses*. This is in sharp contrast to an index designed to measure only the price level of consumers' goods alone. If one is seeking a measure of the average purchasing power of money in the hands of all types of users, when spent over the whole range of purchases and settlements made with money, this comprehensive type of index is desirable. On the other hand, it is difficult to visualize any practical use for such an index number except to verify, through statistical measurement, the theoretical proposition embodied in the "equation of exchange" ($MV = PT$), that the amount of money spent equals the value of all the transactions settled by the exchange of money.⁴ The practical problems which attach to the construction of such an index are: (1) the discovery and assembly of a sufficiently wide range of price data to cover the desired range of prices, and (2) the determination of the proper weight to be applied to each of the items. The statistical work involved in the construction of such an index number is, of course, considerable.

The construction of index numbers of prices. The technical method of construction of index numbers involves complex statistical processes the details of which need not detain us here. It is appropriate, however, to mention briefly some of the outstanding problems which arise in making index numbers, for an awareness of these problems will be of help in using and interpreting index numbers as well as in understanding their limitations:

1. The selection of the general group or class of prices to be measured.
2. The choice of the particular commodities whose price movements may be taken as representative of the price movements of the general group or class.
3. The collection of data on prices of the chosen commodities.
4. The choice of a base period with the prices of which the prices of any given year or years are to be compared.

⁴Such an index of prices has been calculated by Carl Snyder. For a description of this index, see his "Measure of the General Price Level," *Review of Economic Statistics*, February, 1928. The items which he includes in his revised index and the weight assigned to each are as follows:

Industrial commodity prices at		Realty values	10
wholesale	10	Security prices	10
Farm prices at the farm	10	Equipment and machinery prices..	10
Retail food prices	10	Hardware prices	3
Rents	5	Automobile prices	2
Other costs of living items	10	Composite wages	15
Transportation costs	5		

5. The calculation of a properly weighted average of prices, or index number, showing a comparison with the base.

The selection of the general group of prices for measurement by the index number will depend on the purpose for which the index is wanted. Since it would obviously be difficult to include all possible commodities, sample commodities must be chosen to represent the general group. Expediency demands that the size of the sample be kept as small as is consistent with reasonable accuracy. So far as possible, basic commodities are used, because their price fluctuations are representative of the price movements of closely related commodities. To get proper quotations on prices of commodities sold in different markets requires the choice of a sample from each of the several quotations. For example, the Bureau of Labor Statistics obtains its price quotations on a particular commodity from a number of sources considered representative of the whole market, and these sample prices are averaged. The large numbers of unstandardized commodities which result from brands and product differentiation present complications. This fact is illustrated by the problem of choosing representative prices of motor cars.⁵

The collection of adequate price data is relatively easy in the case of staple commodities traded in on organized exchanges. It is difficult where trading is mainly in the form of private transactions in which higgling plays a part. Similarly, retail price data on any comprehensive basis present difficulties.

The choice of the base period. The ordinary index number is a percentage comparison of the average prices of a given year with the average prices of the base period or base year. A near base is more desirable than a remote base for several reasons. First, it is easier to visualize price variations as percentages of a near base. For example, if one wishes to follow the movements of prices during the years 1938, 1939, and 1940, an index which compares those prices with the prices of 1936 would be more easily comprehended than one which compares those prices with prices of the year 1926 or 1913. The advantage of such an index over one based upon 1890 is even more marked. Second, remote base years make more difficult the task of including in the index important new commodities which may not have existed in the base year and the proper weighting of old ones. In contrast, a near base makes possible the construction of an index giving a more valid picture of recent price changes. Yet another reason

⁵ For a brief description of this problem, see an article by Ethelbert Stewart in the *Monthly Labor Review*, December, 1927, pp. 46-52.

for preferring a near instead of a remote base is the tendency for errors and biases, which exist in even the most carefully constructed index numbers, to be exaggerated as the base becomes more remote.

The method of construction of index numbers. An index number is useful only if it presents a reasonably true picture of the behavior of the group of prices which it represents. To furnish a correct picture, it must be properly constructed. The theory behind the proper construction of index numbers is a complex one and need not concern us here. Our purpose will be sufficiently served if we examine briefly the most common methods in actual use.

The simple arithmetical average of price relatives is one common type of price index. The manner of calculating such an index may be easily seen. Let us suppose that we first construct an index number which will show the relative changes in price of a single commodity such as wheat, taking the average price of wheat during the year 1926 as the basis of comparison. The average price of wheat during 1927 may be compared with the average price of wheat in 1926 by calculating the percentage of the 1927 price to the price in 1926. Thus, if wheat in 1926 were \$1.00 per bushel and if a similar grade of wheat in 1927 were \$.95 per bushel, the 1927 price would be 95 per cent of the 1926 or base year price. Similar calculations for subsequent years would give a series of percentages showing the relationship of the price of wheat for each given year to the price of wheat in 1926. This series of percentages, beginning with the year 1926 as 100, comprises an index number of the price of wheat. Similar index numbers of the prices of other commodities can be constructed in the same way. The simplest method of combining these indexes of individual prices to form a general price index is to find the arithmetical average of the percentages for each year. The resulting average is then taken as the index number for the group of commodities. This is illustrated in the following table:

TABLE 58
INDEX NUMBER BASED UPON PRICE RELATIVES

Commodity	1926		1927	
	Price	Percentage Ratio to 1926 Price	Price	Percentage Ratio to 1926 Price
Wheat	\$1.00 per bu.	100	\$.95 per bu.	95
Butter .....	.40 per lb.	100	.36 per lb.	90
Wool .....	.14 per lb.	100	.21 per lb.	150
Coal	4.00 per ton	100	3.24 per ton	81
		41400		4416
Index for 1926 price		100	Index for 1927 price....	104

The simple arithmetical average of price relatives provides an index number which is simple to calculate and is in common use. The wholesale price indexes of the London *Economist* and the London *Statist* are examples of this type of index.⁶ But this type of index has certain serious defects. First, it measures imperfectly the purchasing power of money, because it fails to take into account the differences in importance of the different commodities. The price movements of each commodity have the same weight in the final average as those of every other commodity. But some commodities obviously are of more importance than others and should therefore exert more influence in the index number. A makeshift remedy for this defect may be achieved by introducing the more important commodities more than once. For example, to include both wheat and flour would increase the weight of changes in the price of wheat, for wheat and flour prices tend to move together.

A second characteristic of index numbers constructed from arithmetical averages of price relatives is their upward bias. This means that prices which move upward exert more influence in the index number than do those which move downward. The reason for this lies in the peculiar nature of percentages which may rise to unlimited heights but cannot fall more than from 100 to zero. If, therefore, compared with the base year the price of one commodity doubled, its price relative would be 200. If at the same time the price of another commodity were cut in half, its price relative would be only 50. In the final arithmetical average of the price relatives, the effect of doubling one price is much greater than the effect of cutting the other in half. But to the ordinary observer it would seem that the movement of one price cancelled the other. The index number, however, would show that average prices had increased.⁷

The aggregate type of index number. In constructing its wholesale price index, the Bureau of Labor Statistics has adopted a method which furnishes a practical solution to the problems of weighting and minimizing biases. The average base year price of each of the 784 commodities used in this index is multiplied by the quantity of the commodity marketed during a given representative period. The average price for the given year for

⁶ Fisher, Irving, *The Making of Index Numbers*, Houghton Mifflin Co., Boston, 1927, p. 29.

⁷ To avoid this upward bias the geometric mean may be used. This is calculated by multiplying the price relatives together and extracting the n th root. Cf. Fisher, *The Making of Index Numbers*, pp. 33-34.

which a comparison with the base year is to be made is also multiplied by the same quantity. This gives, for each commodity, the value of the amount sold (1) at the base year price and (2) at the given year price. The total value of all commodities at the given year price is then compared with the total value of all commodities at the base year price. The result is a percentage figure which is the index number. To put it in another way, the index number is the percentage relationship between the values of a given bill of goods at the given year and the base year prices. This is illustrated in Table 59.

The formula for the construction of this type of index number is:

$$\frac{\sum p_1 q}{\sum p_0 q}$$

when p_0 is the price of each commodity in the base year,
 p_1 is the price of each commodity in the given year, and
 q is a representative quantity of each commodity.

Price Dispersion

A rise or fall in the price level results from the movement of the mass of individual prices which make up the general average. But by no means does it follow that particular or individual prices move in proportion to movements of the general price level. On the contrary, some individual price movements exceed while others are less than the movement of the general average. This is true both of price movements of a long-run or secular nature and of short-run or cyclical price changes.

This tendency of individual prices to scatter, called *price dispersion*, is at the root of many problems which pertain to money and prices. Especially is this true of cyclical price changes. If all prices moved together at the same time and in the same proportion, costs of production would remain in line with selling prices, and disturbances to business enterprise resulting from general price changes would be greatly reduced.

Dispersion of individual prices. The tendency of individual prices to scatter in the face of long-run general price changes may be easily seen in Chart 18. The average annual rate of change in price of each of a selected group of commodities is shown for the period 1896-1913. This dispersion of prices which persists over a long period of years is mainly due to basic changes in the demand for the different commodities and in their costs of pro-

TABLE 59
AGGREGATE-TYPE INDEX NUMBER

Commodity	BASE YEAR			GIVEN YEAR		
	Price	Quantity	Total Value	Price	Quantity	Total Value
Wheat	\$1.00	× 400,000,000 bu.	= \$ 400,000,000	\$.95	× 400,000,000 bu.	= \$ 380,000,000
Butter .....	.40	× 1,500,000,000 lb.	= 600,000,000	.36	× 1,500,000,000 lb.	= 540,000,000
Wool .....	.14	× 400,000,000 lb.	= 56,000,000	.21	× 400,000,000 lb.	= 84,000,000
Coal	4.00	× 300,000,000 tons	= 1,200,000,000	3.24	× 300,000,000 tons	= 972,000,000
Aggregate value at base year prices			= \$2,256,000,000	Aggregate value at given year prices		= \$1,976,000,000
Index number, percentage of given year aggregate of base year aggregate						87.5

duction. It is but little affected by the monetary and other forces which caused an increase in average wholesale prices from 66 to 100 (1913 = 100).⁸

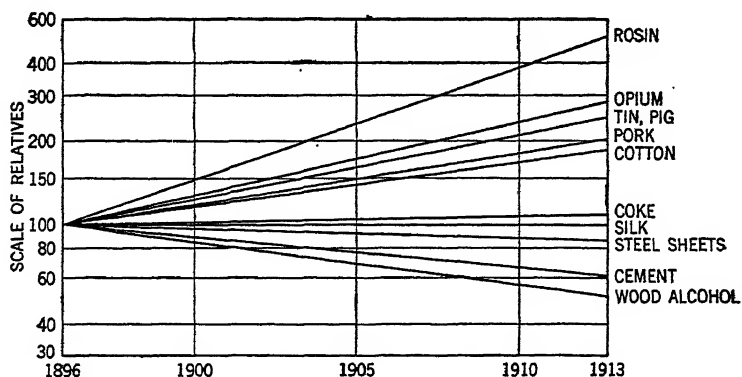


CHART 18. LINES OF TREND MEASURING THE AVERAGE ANNUAL RATES OF CHANGE IN INDIVIDUAL COMMODITY PRICES BETWEEN 1896 AND 1913. From Mills, F. C., *The Behavior of Prices*, 1927, p. 68. (Courtesy of the National Bureau of Economic Research, Inc.).

Not only is there marked long-run dispersion among the prices of individual commodities, but also groups of prices show differences in behavior. Chart 19 shows both the secular and the cyclical dispersion among wholesale prices, retail prices, general prices, and wages for the years 1860-1934. Chart 20 shows the movements of four classes of prices during the depression and recovery period 1929-1936.

Considerable interest now exists in the differences in behavior of prices of various commodities during depression and recovery. During depressions, some prices fall sharply while others show but little change. Those commodities whose prices move widely are called "sensitive," while those whose prices move but little are called "insensitive." The reason for such marked differences in behavior has been responsible for no little discussion, with which we are not directly concerned at this time.

The Effects of Changes in the Price Level

Economic disturbances provoked by changes in the general level of prices arise mainly from the failure of incomes, debts, and individual commodity prices to change proportionally. In the

⁸ Cf. Mills, Frederick C., *The Behavior of Prices*, New York, National Bureau of Economic Research, 1927, pp. 65-69, for a discussion of differences in trends of individual prices.

troughs and peaks of prices become progressively lower with the passing of time.

Effects of price changes upon income distribution between debtors and creditors. While one may hardly attempt to justify the particular distribution of wealth and income which exists at any one time in economic society, one may, nevertheless, very properly object to capricious shifts in the existing distribution which are induced by changes in the price level. Yet such a change does occur whenever the price level rises or falls to any appreciable extent.

It is well recognized that rising prices, for instance, tend to enrich debtors at the expense of the creditors. Because debts call for the repayment of a given number of dollars, a rise in prices almost certainly will reduce the buying power of creditors' fixed money receipts. On the other hand, unless pursued by unusually bad fortune, the debtor will find repayment easier than before because of a rise in the money value of anything he has to sell. Falling prices have just the opposite result. The fixed incomes of creditors grow in purchasing power while the luckless debtor finds his money income shrinking in the face of rigid and irreducible debts. Nor may one properly argue that the self-reversing tendencies of prices will eventually restore the losses and lead to ultimate justice. Upswings in prices, whether cyclical or secular, are not necessarily followed by equal and corresponding downswings. Furthermore, new debt structures involving new individuals and adjusted to the new price levels follow any marked changes in prices. During a period of low prices which follows an earlier high price period, new debts are created and old debts are adjusted to the lower price level. To hope that a subsequent rise in prices would correct the injustices of the falling prices would be to disregard the new injustices which rising prices would heap upon the heads of a new set of innocent creditors.

When price inflation takes extreme forms, as it did in parts of Europe after the First World War, old debt structures may be almost completely extinguished. This occurred in Germany in 1921-1923, when the paper mark fell to one-trillionth of its gold value. Such results are especially damaging to small and middle-class savers holding savings bank deposits and bonds. Thrift becomes a mockery in the face of acute inflation.

On the other hand, extreme deflation, such as occurred after 1929, may be so severe as to wipe out altogether the equity of debtors in their property and to result in the transference of

ownership to the creditors. The plight of many American farmers during the Great Depression well illustrates this fact.

The effects of price changes upon business incomes. Incomes of businessmen are residual in nature. After their contractual obligations in the way of wages, material costs, and debts are met, the remainder goes to the businessman as his share. Anything that increases or decreases the gross income of a business, without causing a proportional increase in its expenses or costs, will expand or contract, as the case may be, the size of the residual amount going to the owners. A rise or fall in the level of commodity prices tends directly to increase or decrease the gross income of business. At the same time, some costs—for instance, raw materials—will also change. But some important costs are “sticky” and respond slowly to the movement of commodity prices. Sticky costs are those controlled by custom, legal regulation, monopoly, and long-term contracts. While by no means absolutely inflexible, these costs adjust slowly to the general commodity price situation. During rising prices, interest and principal payments on pre-existing debts are unaffected. The cost of public utility and transport services can increase only after the adjustments in rates can be wheedled out of the regulatory commissions. Wages, which constitute the most important single cost of many industrial firms, also tend to be adjusted belatedly to the rising price level. Altogether, these lagging costs enable businessmen to enjoy profits which rise faster than the price level. These excessive gains are sometimes referred to as “windfall” profits, to indicate that they are the result of the fortuitous circumstance of a rising price level instead of a reward for efficient management and meritorious anticipation of economic trends. Not only do windfall profits result in unjust enrichment of the businessman at the expense of other income getters, but also they encourage overexpansion of investment and booms.

Not all businessmen, however, are in a position to profit excessively from rising prices. This is particularly true of business enterprises whose prices or rates are subject to public control. While costs of such firms rise with rising general prices, rates charged for their services can be raised only when the regulating authority gives consent.

Just as rising prices with lagging costs give windfall gains, so falling prices with lagging costs result in windfall losses. Interest rates and wages are difficult to bring down, and their stickiness in times of falling commodity prices results in undeserved losses.

To be sure, if invention and improved industrial technique were causing a fall in money costs which corresponds to the fall in prices, the change in prices would not be objectionable. But, as a practical matter, one can hardly expect any uncontrolled price movement to meet this exacting requirement.

The effect of changing prices on wage earners. Because changes in wage rates lag behind changes in commodity prices, workingmen find that the real value of their wages tends to fall as prices rise. For this reason laborers do not share proportionately either in the results of technical improvements or in any expansion in production which may accompany a period of rising prices. On the other hand, when prices fall, lagging wage rates tend to increase labor's share in the national income. But this gain to labor depends primarily upon a gradual and moderate rather than a rapid fall in prices. Sharply falling prices destroy labor's advantage by causing a decline in business activity and employment.

Long-run price changes and business activity. The long-run price trend has been an object of deep concern to students of monetary problems. During the late 1920's, this concern led to great interest in the question of the adequacy of the world's monetary gold supply to maintain the postwar level of prices.⁹ The basis of this interest in the long-run price trend rests in the widely held belief that depressions are prolonged and exaggerated by a falling price trend, while shorter depressions and longer periods of prosperity characterize periods of long-run rising prices. The tangible evidence offered to support this belief is found in Table 60, which embodies the findings of Dr. Willard L.

TABLE 60

THE RELATIVE DURATION OF PROSPEROUS AND DEPRESSED PHASES OF BUSINESS CYCLES IN PERIODS OF RISING AND FALLING TRENDS OF WHOLESALE PRICES IN THE UNITED STATES AND ENGLAND

UNITED STATES			ENGLAND		
	Price Trends	Years of Prosperity per Year of Depression		Price Trends	Years of Prosperity per Year of Depression
1790-1815	Prices rising	2.6	1790-1815	Prices rising	1.0
1815-1849	Prices falling	8	1815-1849	Prices falling	9
1849-1865	Prices rising	2.9	1849-1873	Prices rising	3.3
1865-1896	Prices falling	9	1873-1896	Prices falling	4
1896-1920	Prices rising	3.1	1896-1920	Prices rising	2.7

⁹ For an examination of this problem, see Chapter XLIV.

Thorp as quoted by Professor W. C. Mitchell in his study of business cycles.¹⁰

The moral of the data appearing in Table 60 seems to be that downward trends in prices must be avoided if depressions are to be kept at a minimum. There appear to be reasonable grounds to support the above conclusion. It is well known that falling prices are unpopular with businessmen, since they impose a reduced level of profits and, at times, losses. The stickiness of wages and interest charges contributes to the embarrassment of businessmen faced with falling prices. A scaling down of such interest charges and wage rates can come about only by depression and unemployment. Further, long-run upward price trends are generally characterized by more than normal increases in the monetary gold supply, while falling price trends generally have been accompanied by a smaller increase in the supply of gold. To the extent that prosperity is brought to an end by a shortage of bank reserves, and relief from depression is facilitated by the accumulation of a plentiful supply of reserves, rapid increases in gold available for bank reserves might be expected to permit the expansion phase of the cycle to continue longer and to hasten the termination of depression. Contrarily, slower rates of increase in gold would tend to shorten the prosperous period and lead to longer depression.

Objections to the conclusion that falling price trends are undesirable. The conclusion that long-run falling prices increase the length of periods of business stagnation and are therefore highly undesirable is open to criticism on several grounds:

1. A decline in the price level need not depress business if it is accompanied by an equal reduction in costs arising from technical improvements.

2. The mere fact that prolonged periods of depression appear at the same time as falling secular price movements is no proof that depression is caused by falling prices. It may be argued with equal facility that depressions cause the declining price trend or that both are the result of some common cause and neither the cause of the other.

3. As presented by Mitchell, the evidence is biased in the direction of proving the conclusion that falling prices promote depression and rising prices promote prosperity. This bias arises from the manner in which the turning points in the secular

¹⁰ *Business Cycles, The Problem and Its Setting*, New York, National Bureau of Economic Research, 1927, p. 411, quoted with the permission of the publisher.

price movements are related to cyclical movements. For example, the downward trend of English prices began with the depression of 1873 and continued irregularly until 1896. The latter year marked both the beginning of the upward trend of prices and the end of a period of depression. Thus, the period 1873-1896, constituting the period of the downward price trend, is biased in favor of depression because both the beginning and end are depression periods. The period 1896-1920 is in turn biased in the direction of prosperity. It begins in 1896 at the start of a business revival and ends in 1920 at the end of the long war and postwar boom. Periods of downward price trends include an extra period of depression, while the upward price periods include an extra period of prosperity. The choice of turning points in this manner can hardly be avoided, but such a choice inevitably provides a biased picture of the relation between price trends and the prevalence of depression.

4. The terms *prosperity* and *depression* as used by Mitchell have no very exact meaning. They cannot be defined quantitatively but are merely relative terms.¹¹ It follows that the existence of more or fewer months of "depression" as compared with months of "prosperity" may mean much or little, depending on the intensity of the depression and prosperity experienced.

5. The behavior of the per capita real income of the United States during periods of rising and falling trends of prices points to the conclusion that national economic welfare improved more rapidly during periods of falling prices than during the periods of rising prices. This evidence, presented in Table 61, does not

TABLE 61
INCREASE IN PER CAPITA REAL INCOME IN THE UNITED STATES, 1850-1928*

Period	Price Trend	Income at Beginning	Income at End	Gain in Real Income	% Gain for Period	Average Annual Gain for Period
1850-1860	Upward	\$ 69	\$ 82	\$ 13	18.8	1.88
1870-1880	Downward	79	111	32	40.5	4.05
1880-1890	Downward	111	169	58	52.2	5.22
1890-1900	Irregular	169	232	63	37.2	3.72
1900-1910	Upward	232	262	30	12.9	1.29
1913-1928**	Upward and stable	368	541	173	47.0	3.13

* Data from W. I. King's *The Wealth and Income of the People of the United States*, New York, The Macmillan Co., 1917, p. 129.

** *Encyclopaedia of the Social Sciences*, Vol. XI, p. 206.

¹¹ *Business Cycles, The Problem and Its Setting*, p. 382. It is well to mention that the common assumption that the period 1850-1870 was one of rising prices has been criticized by Rufus S. Tucker in "The Myth of 1849," Appendix A of C. O. Hardy's *Is There Enough Gold*, Washington, D. C., Brookings Institution, 1936.

prove that the rate of economic advance might not have been even more rapid during periods when prices were falling, had prices risen instead. But at least it raises serious doubts as to the validity of the widely accepted belief that downward price trends in the United States have been economically objectionable.

The relation of short-time price fluctuations to business activity. Short-time or cyclical fluctuations in business activity are generally accompanied by corresponding changes in the price level. High or rising prices tend to accompany prosperity, while low or falling prices characterize depressions. So closely are price fluctuations associated with changes in business activity that some regard cyclical changes in business as being essentially price phenomena. Such a view is understandable in the light of the fact that common causes lie behind both price and business fluctuations.

Any extensive examination of the causes of short-time price changes must be postponed until a later chapter. It is enough for our present purpose to suggest here that changes in the profit prospects of business tend to slow down or to speed up the tempo of business activity. Changes in business tempo are introduced by altering the rate of spending money. Through changes in the rate of spending, changes both in business activity and in the price level are brought about. If the supply of all commodities were perfectly elastic, changes in the rate of spending money and in business activity would not require changes in prices. But in fact the supply of commodities is not perfectly elastic. Changes in the rate of spending do, therefore, lead to changes in prices.

So long as cyclical fluctuations in business activity occur, it seems unlikely that cyclical price fluctuations are to be avoided. It is not at all clear, moreover, that a complete avoidance of fluctuations in business activity is either possible or desirable. In the past, periods of rapid growth in business activity have frequently accompanied a rapid exploitation of new inventions or newly found resources. Such developments, unquestionably, both quickened the whole industrial pulse of the times and left society immeasurably improved by the immense expansion of productive facilities. Without a flexible, expanding monetary supply and an upward movement of prices (either absolutely or relatively), these periods of rapid forward movements would have been unlikely if not entirely impossible. Such bursts of economic advance were probably beneficial in spite of the inevitable reac-

tions and periods of readjustment which followed. The case for complete business and price stability is weakened by the prospect that such a goal might be obtained only at the price of stagnation and lack of progress.¹²

Although there undoubtedly are forces deeply imbedded in our economic structure which make for "appropriate" changes in output and prices, we must not become blinded to the fact that fluctuations both in business activity and in prices may become excessive. In such a case they cease to be a necessary adjunct of desirable economic change in a free money economy and become instruments of evil and destruction. Under these circumstances, the part played by price movements in inducing changes in business activity becomes important.

Disturbances to business stability arising from short-run price changes. Those price movements which facilitate fundamental economic changes and adjustments can be said to be desirable. Even when the process involves an expansion in the nature of a "boom," one may temper his criticism on the grounds that the boom made possible the vast and rapid expansion of the new capital equipment needed to establish some new and vital industry. Yet, by and large, most cyclical price movements cannot be justified upon such grounds, for they tend too often to exceed the bounds of economic necessity. Regardless of the originating force, once under way, such price movements tend to abandon their passive role and to become themselves active causes of economic fluctuations.

The reasons for the cumulative and self-generating nature of cyclical price movements are not difficult to understand. In the first place, let us assume that the monetary system possesses sufficient elasticity to accommodate itself to further price movements. This elasticity may come from a variation in the velocity of spending money, a variation in the quantity of money, or both. Without elasticity in the supply of money, cyclical price movements could hardly occur. A cyclical upswing in commodity prices, with lagging production costs, creates windfall business profits. Businessmen become optimistic and attempt to expand productive capacity. Bank credit is utilized to accomplish this expansion, and the rise in prices continues. But this expansion in new investment cannot continue indefinitely. Either rising costs and increased output reduce the previous optimistic ex-

¹² Cf. Robertson, D. H., *Banking Policy and the Price Level*, London, P. S. King & Son, Ltd., 1926, pp. 6-18 and 22.

pectations, or a disappearance of excess reserves in the banking system requires that credit expansion be brought to an end. The result is a reversal of the trend, a decline in the rate of new investment, falling prices, and diminished business activity.

When prices fall, lagging costs cause business to suffer windfall losses. Business expectations are made worse by the fall in prices, and activity declines. An additional unfavorable factor appears in the shape of forced credit liquidation which may be imposed upon business by the banks. This is especially likely to occur when depression leads to business and bank failures. The banks believe themselves to be acting in self-interest when they refuse loans to borrowers whose solvency is in question and when they reduce the volume of their loans in order to improve their liquidity. But such forced liquidation imposed by the banks tends to aggravate the drop in commodity prices and to make the situation of the businessman more acute.

Those who would introduce monetary control as a means of stabilizing prices and business activity believe that two benefits might be achieved. First, a stable price policy would prevent the development of powerful upswings in business activity, for it would prevent an expansion of money and prices so necessary for an upswing in business. Second, by avoiding price movements, the added cumulative effects of windfall profits and losses might be minimized.

CHAPTER XXXI

THE THEORY OF THE VALUE OF MONEY

THE value of money was defined when we examined the behavior of money and prices. In brief, this value is measured by what a unit of money will buy in terms of a representative assortment of economic goods. Putting it in another way, the value of money is the reciprocal of the price level, and changes in the value of money are indicated by changes in an appropriate index of prices. Indeed, it is customary to approach the study of the theory of the value of money by examining price movements and attempting to find the reasons for their occurrence. We may, therefore, visualize the problem of the value of money as the problem of explaining the behavior of the price level. Enough has been said in the preceding chapter to indicate that the concept of the value of money is not simple. Rather it is dependent upon *whose* money one is talking about. The money of the businessman may suffer a more rapid loss of value during a period of rising prices than may that of the consumer, whose main interests are in the cost of living instead of wholesale prices. The value of money measured by a general price index is often considerably different from that measured by an index of commodity prices at wholesale. Although one should keep in mind the limitations of any single index of prices, it is nevertheless possible to use an index such as that of wholesale prices to obtain a rough but usable measure of the changes in the value of money.

The basic problem relating to the value of money is to explain the causal forces which determine it. This necessarily involves not only an explanation of the value of money at any particular time, but also the causes of changes, both of a long- and short-time nature, which may occur.

The importance of the theory of the value of money. Knowledge of the forces which determine the value of money is vitally needed in any attempt to solve modern economic problems. Because more and more the problem of controlling price move-

ments is coming to be considered a proper goal of governmental action, those in charge of such action need to understand the basic principles of monetary theory. The public is becoming increasingly aware of the injustices which arise from marked changes in the price levels. Quite properly there is a growing belief that it is quite as much the duty of the government to prevent the shifts in wealth and income which result from price changes as to prevent those which arise from theft, fraud, and intimidation. Moreover, the close association of price movements with business fluctuations leads to the belief that, regardless of the basic causes of business fluctuations, preventive and ameliorating action may be taken in the form of influencing price movements through monetary controls. In other words, monetary control—managed currency—may furnish one point of attack upon the problem of the business cycle. Regardless of whether or not this last view is fully correct, a proper theory of the value of money upon which one could rely with confidence would be of considerable practical value.

Methods of approach. There are two basic methods of approach to the theory of the value of money. One is the statistical method, which seeks, so far as possible, correlations between changing economic situations which may influence the price level and changes in the price level which actually occur. Such studies may be used as a basis for formulating a theory of prices. The second method is to approach the problem by abstract reasoning. Both methods have their peculiar limitations, and dependence upon either alone is not satisfactory. Only when both are properly combined can one have any confidence in the resulting theory.

Studies of prices may proceed along two different lines. Some analyses deal essentially with long-run price movements. This approach is useful in explaining the secular or long-run trend, but contributes little to the explanation of cyclical price changes. Other studies are directed primarily to the understanding of short-run price changes. The urgent need for the latter type of study tends to make theories of long-run price change fall into relative insignificance.

The Demand for Money

There are two well-accepted views of the demand for money. The first is known as the "transactions approach" and the second as the "cash-balance approach." The transactions approach involves the theorizing of the English classical school of economists

as represented by J. S. Mill and has been brought down to its modern form and popularized in the writings of E. W. Kemmerer and Irving Fisher. The cash-balance approach was developed by Cambridge University economists headed by Alfred Marshall.

The demand for money, transactions approach. The transactions approach to the demand for money is essentially mechanical in nature. It utilizes the same concept of demand that is applied to the problem of value of commodities, for "demand" is visualized as the offering of economic goods in exchange for money. For example, just as the demand for any commodity is thought of as the amounts of money which buyers will offer for different amounts of the thing offered for sale, so the demand for money is thought of as the commodities and services which sellers of goods will offer in exchange for various amounts of money.

According to this view, as used by the "quantity theorists," the demand for money is unity.¹ That is, the volume of goods and services which are being offered in the market in exchange for the total money supply is a constant and is not affected by differences in the volume of money. Therefore, the total value of the monetary supply in terms of other things is constant. The basic reasoning behind this view is found in the fact that fundamentally the volume of things which will be sold in the market is determined by the volume of industrial output and the degree of specialization involved in creating and distributing that output. Now, so long as there is sufficient money to permit the normal functioning of a money economy, it would seem that the volume of goods produced and the specialization used are governed primarily by the supply of natural resources, the state of industrial technique, and the capabilities of the population. Therefore, the theory that the demand for money is unity would seem to rest on solid ground, but, as we shall see later, the assumption of a unitary demand for money is of questionable validity in the short run.

To illustrate the workings of the transactions theory of the demand for money, let us assume that in a given community and during a given interval of time there are \$1,000,000 and 1,000,000 units of goods to be sold. If all the goods are exchanged for all the dollars, each dollar is exchanged for one unit of goods; therefore, the value of the dollar is one unit of goods and the price of one unit of goods is \$1.00. Now, suppose that the number of

¹ The demand curve for a thing whose demand is unity is a rectangular hyperbola, which means that regardless of the supply of the thing offered for sale, the total amount offered in return is always the same.

dollars be increased to \$2,000,000, with no change in the number of units of goods. Two dollars will then be exchanged for each unit of goods, and the value of a dollar will be $\frac{1}{2}$ unit of goods, or the price of one unit of goods will be \$2.00. From this view of the demand for money, the conclusion is reached that the value of money varies in an inverse proportion to its quantity, or that the general level of prices varies directly in proportion to the quantity of money.²

Of course, during a period of time while changes in the quantity of money are bringing about a change in the price level, the assumption that the demand for money is unity does not correspond to the facts. If prices are rising, sellers of goods tend to hold goods back in order to obtain speculative profits; hence, during the interval, the demand for money may be less than before the price movement began. Likewise, if prices begin to fall as the result of a lessening of the quantity of money, more goods than usual may be offered for money as businessmen attempt to minimize losses by reducing their inventories. This condition tends to cause an increase in the value of money that is more than proportionate to the decline in its volume. Moreover, changing prices are almost certain to be associated with changes in the volume of production, so that the demand for money is subject to variation from this cause. Likewise, changes in the volume of speculative trading in securities, land, or commodities in general are subject to wide variations, and in themselves these changes influence the demand for money and tend to invalidate the assumption of a constant demand. It is clear, therefore, that any explanations of the value of money based on the assumption that the demand for money is unity may be criticized as incapable of giving a satisfactory solution to the problem of short-run price fluctuations.

² John Stuart Mill expressed this view as follows: "The supply of money, then, is the quantity of it which people are wanting to lay out; that is, all the money they have in their possession, except what they are hoarding, or at least keeping by them as a reserve for future contingencies. The supply of money, in short, is all the money in *circulation* at the time.

"The demand for money, again, consists of all the goods offered for sale. Every seller of goods is a buyer of money, and the goods he brings with him constitute his demand.

"If there were less money in the hands of the community, and the same amount of goods to be sold, less money altogether would be given for them, and they would be sold at lower prices; lower, too, in the precise ratio in which money was diminished. So that the value of money, other things being the same, varies inversely as its quantity; every increase of quantity lowering the value, and every diminution raising it, in a ratio exactly equivalent." *Principles of Political Economy*, Book III, Chapter VIII.

The cash-balance approach. The cash-balance approach uses a very different concept of the demand for money from that of the transactions approach. Those who prefer the cash-balance approach hold it unrealistic to think of the demand for money as a mass of goods being exchanged against a mass of money. Rather, they prefer to inquire why money is wanted. They hold that money is wanted primarily as a means for storing values in highly available or liquid form. It is a basic function of a properly working medium of exchange to enable a person to sell his products and services today and buy other things when wanted in the future. In its capacity as a store of value, money permits one to regularize his expenditures while receiving an irregular income; to spend a regular income in an irregular manner; to await the appearance on the market of the thing specially suited to his needs; to await the appearance of prices of both commodities and securities more favorable than those ruling at the moment; and to meet emergencies as they arise.³ Everyone who receives an income finds it desirable and necessary to make some use of money as a store of value. The importance of such use varies with the individual and his particular requirements. For example, one who receives an income at irregular and infrequent intervals must, other things being equal, feel greater need for money as a store of value than a person receiving a highly regular and frequent income. The businessman, whose success depends in part on his ability to pick up a bargain when it appears, has a greater need for cash balances than has the college professor. The probability of emergency expenditures tends to enhance the attractiveness of a cash balance. To the conservative individual a cash reserve seems more essential than it does to the impulsive and short-sighted. Finally, the existence of price movements bears on this question. Rising prices reduce and falling prices enhance the advantages of holding cash.

The impulse to hold purchasing power in the form of cash balances is modified by the undeniable fact that such cash balances are an expense to the owner. This expense consists of the enjoyment or profit which might have been obtained by spending this cash balance. Further, it is influenced somewhat by the possibility of holding values in somewhat less liquid and more remunerative form in the shape of time deposits and readily salable securities.

³ The holding of money derived from current income is not the only way to accomplish these things. Buying on credit and other forms of borrowing may be used instead.

Under any given circumstances, there is an amount of buying power which the public wishes to have available in the form of money. This buying power must be sufficient to purchase the volume of goods and services which the public feels it should be able to command with its cash balances. One may conveniently think of this aggregation of goods and services as a given fractional part of the national income. A growth in national income will presumably cause some increase in the volume of goods and services which the public wishes to be able to buy with its cash holdings. On the other hand, some other change, such as an increase in industrial integration, would tend to reduce the need for holding buying power in cash.

The application of the cash-balance theory of the demand for money. How, one may ask, is such a concept of the demand for money to be applied in explaining its value? Clearly the desire of the public to hold in cash sufficient buying power to purchase a given volume of goods and services cannot directly affect the volume of available cash. Further, the existing supply of cash is always being held by someone or other all of the time. Since this is true, the problem confronting the public that wishes to hold a given amount of buying power in the form of cash is how to compel the existing supply of money to buy the required volume of goods and services. To accomplish this, the general public has only one available method. To illustrate, let us suppose that the value of money is already such that the existing supply has a total purchasing power equal to $\frac{1}{10}$ of the nation's annual real income. Now, if the public wishes its cash balances to buy $\frac{1}{8}$ of the annual income instead of $\frac{1}{10}$, the increase in purchasing power must be brought about by the action of individuals. The only way in which an individual can increase the buying power of his own cash holdings is to try to expand the volume of these holdings. Assuming that he will not do this by borrowing, he must spend less money in relation to his income than usual during a given period of time. But if everyone else does the same thing, the net result must be that, since the total money supply held by the public remains unchanged, the total volume of money spent is reduced and the price level will fall.⁴ The fall in prices which results from the reduced spending must continue until the existing cash balances will buy $\frac{1}{8}$ instead of $\frac{1}{10}$ of the national income.

⁴To put it in another way, it might be said that everyone is now willing to offer more "things" to get money. Cf. Pigou, A. C., *Essays in Applied Economics*, London, P. S. King & Son, Ltd., 1930, p. 173.

On the other hand, a decline in the desire of the public to hold buying power in cash form causes an increase in the velocity of spending. Outlays of cash exceed current incomes and force prices up to the point where the buying power of the stock of money falls to the required level. Under these circumstances, the holders of money resemble the boy who is trying to run away from his shadow: run as he may, it always remains with him. Similarly, spend as they may, the holders of cash cannot actually rid themselves of it. But, like the boy, they may end in an entirely different place from where they started.

The cash-balance approach, therefore, holds that the value of the existing money supply is determined by the desire of the public to store up, in the form of money balances, purchasing power over goods, services, and property of various kinds, including securities. The value of the total money supply must be equal to this required purchasing power. Thus, if the public requires the current money supply (which we shall assume to be 1,000,000 units) to purchase 500,000 units of goods, each unit of money must be worth $\frac{1}{2}$ a unit of goods. If the number of units of money is doubled, the value of each must decline to $\frac{1}{4}$ of a unit of goods.⁵

Factors affecting the demand for consumer cash balances. There remains for consideration the somewhat perplexing question of the causes lying behind the demand for cash balances. In searching for the answer, it is well to remember that the demand for cash balances is essentially an individual matter and must be explained in the light of individual preferences for cash instead of other things.

Let us first examine the problem from the standpoint of consumers. A consumer can expand his volume of cash holdings only at the expense of some reduction in his consumption. Each consumer must strike some point of balance at which the marginal advantage of liquid assets in the form of cash is just equal to the marginal advantage of added consumption. An increase in the prices of things which he buys tends to increase his need for cash balances in about the same proportion. Likewise, if increased productivity leads to an increase in money income with no increase in commodity prices, his cash requirements are likely to increase proportionately. To some extent, of course, the consumer is exposed to the speculative opportunities afforded

⁵ Cf. Marshall, Alfred, *Money, Credit and Commerce*, London: Macmillan & Co., Ltd., 1923, pp. 43-46, and Keynes, J. M., *Monetary Reform*, New York: Harcourt, Brace & Co., 1924, pp. 81-86.

by changes in the value of money, so that, temporarily, rising prices diminish and falling prices increase his desire for cash. But, in general, that person of modest income known as the average consumer finds little room to vary the size of his cash balances beyond the limits set by the size of his money income.

Factors affecting the demand for cash balances by businessmen. The demand for cash balances held by investors and businessmen cannot be explained upon the same simple grounds which suffice to explain consumers' cash requirements. Businessmen do not strike a balance between the advantage of holding liquid cash assets and the desire to consume. Rather, they must balance the advantages of holding cash against the net advantage of investing in securities or in productive capital goods. This calculation necessarily takes the form of weighing "anticipations" as to the need for cash against the "anticipations" of gains from investment. To use the analysis of Mr. Hicks,⁶ the anticipation of gain from investment depends on the difference between the expense involved in making an investment and the expected profit or interest (including the expected gain or loss from changes in capital value of the investment). The demand for money by the business and investing classes is, therefore, subject to wide changes in response to changes in profit expectations. The appearance of good business and profit prospects reduces sharply the demand for money, while an anticipation of declining profits or losses causes a sharp increase in the preference for cash.

Unlike the consumer, businessmen and investors need not adapt their demand for money to changes in the price level. A rise in consumers' money income and expenditure causes a more or less proportional rise in the need for cash balances in order that expenditure may be carried on in a sensible and customary manner. If consumers' money income shrinks and prices decline, their need for cash balances will decline. Thus, the demand for money by consumers tends to change directly with the price level, and the demand for purchasing power over real income (commodities and services) tends to be relatively constant. This gives support to the view that the demand for money is a constant; therefore, its value varies inversely with its quantity. But the cash balances of the business and investing groups need

⁶ Hicks, J. R., "A Suggestion for Simplifying the Theory of Money," *Economica*, February, 1935. Hicks' discussion is based upon the same approach as that used by Keynes in his discussion of the "Speculative-motive" in his *General Theory of Employment*, New York, Harcourt, Brace & Co., 1936, Chapter XV.

not rise and fall with the rise and fall of prices. The need for cash balances does not necessarily increase as the prices of securities and capital goods increase. Because of the speculative element which influences business behavior so heavily, rising prices encourage the paring down of the size of cash balances. This decline in the "demand" for money leads to price increases which are greater than the increase in the quantity of money. During periods of declining profit prospects, the demand for money increases and current income is allowed to accumulate in idle balances. Security and capital goods prices fall as investment declines. But this does not reduce the demand for money until investors are convinced that the bottom of prices has been reached and new investment is desirable. Because the business and investing groups trade largely with each other, and because their demand for cash balances is highly sensitive to changes in profit expectations but highly insensitive to changes in the price level of those things in which they deal, price fluctuations arising from changes in the demand for money by businessmen and investors tend to be acute.⁷

⁷ *Ibid.*, pp. 16-18.

CHAPTER XXXII

THE THEORY OF THE VALUE OF MONEY (CONTINUED)

The Quantity Theory

The equation of exchange. To give expression to the classical view that the demand for money consists of the goods and services offered in exchange for it, there has been formulated an "equation of exchange" which is commonly referred to as the "transactions equation." By assuming that all money in circulation is of one type, the equation may be stated in the following simple form:

$$MV = PT,$$

or

$$P = \frac{MV}{T}.$$

This equation describes the events which occur over a period of time. M is the volume of money in circulation (that is, not in bank reserves, but where it may be spent directly upon goods and services). V is the velocity of money or the average number of times that the money is spent during a given period. MV is therefore the equivalent of the total amount of effective money that can be demanded during the given interval of time. T represents the total volume of financial settlements made during the period from the sale of goods, services, securities, and other intangibles.¹ P is the price level or index of prices of everything represented by T , weighted according to relative unit value.

¹ It is incorrect to think of T as the equivalent of the current output of goods and services. Some goods are bought and sold many times before they emerge from the productive process in finished form. T is therefore influenced quite as much by the *turnover* of goods as by their absolute volume. Further, old capital goods, land, and securities sold in the market are a part of T . To be exact, credit sales for which payment is postponed to a later period are not a part of T . On the other hand, past credit sales involving payments within the given period must be included.

Visualizing MV as the total supply of money available during the period and T as the sum total of goods, services, and so forth, which are offered in exchange for MV , we have the basic concept behind the transactions equation of exchange as used by the quantity theorists. The demand for money is thought of as being unity; that is, regardless of the size of MV , the same volume of T will be offered in exchange.

The equation of exchange, $MV = PT$, is, of course, a simple truism which states that the amount of money spent during a given period (MV) is equal to the money value of all the things bought (PT). It does not, of course, explain *why* the price level is what it is. The equation is merely a convenient means of bringing to attention some fundamental factors that bear upon the determination of the level of prices. There still remains the problem of discovering the causal relations between these factors.

The quantity theory of money. Beginning with the equation of exchange, the quantity theorists make certain assumptions with respect to the factors contained therein.

1. It is assumed that T is an independent factor whose magnitude is unaffected by changes in the quantity of money. The basic correctness of this assumption is supported by the argument that "an inflation of the currency cannot increase the product of farms and factories, nor the speed of freight trains or ships. The stream of business depends on natural resources and technical conditions, not on the quantity of money. The whole machinery of production, transportation, and sale is a matter of physical capacities and technique," and does not depend on the quantity of money.²

This assumption is qualified, however, by a recognition of the fact that during transitional periods, when the increasing or decreasing quantity of money is bringing about rising or falling prices, some changes in T actually occur. Rising prices encourage the expansion of industrial output and trade, while falling prices have the opposite effect.³

2. It is assumed that the velocity of spending money (V) is also independent of changes in the quantity of money. The rate of turnover or velocity of money is the result of individual decisions and is the ratio of total money to the amount spent dur-

² Fisher, Irving, *The Purchasing Power of Money*, New York, the Macmillan Co., 1922, p. 155, quoted with the permission of the publishers.

³ *Ibid.*, pp. 61-63.

ing the interval. In the course of receiving and spending its income, the public requires some cash holdings as a store of value. Persons with regular, frequent incomes that synchronize with expenditures are able to get along with small cash balances, while those with irregular and infrequent incomes require larger amounts of cash. Conservative persons prefer larger cash reserves than do spendthrifts. People who buy for cash must normally carry more cash reserves than those who buy on credit. The cash one needs is determined largely by convenience. Too small a cash reserve is dangerous and inconvenient while too much is a needless extravagance. An expansion in the quantity of money must result in an increase in spending, for otherwise there would be an unnecessary waste of purchasing power. Prices may therefore be expected to rise. But as prices rise, the volume of cash needed for personal and business convenience may be expected to rise in proportion.⁴

It is admitted, however, that the assumption that velocity is stable does not apply to transitional periods during which the effects of changing quantities of money are being worked out, for rising prices tend to cause an increase in the velocity of money while falling prices tend to reduce it. Therefore, a change in the volume of money will not result immediately in an exactly proportional change in the price level. But after the transition from one price level to the new one has been accomplished, V and T may be expected to return to their normal level, so that, in the last analysis, it is correct to say that a change in the quantity of money causes a proportional change in the level of prices.⁵ Irving Fisher, a prominent quantity theorist, sees continuous disturbances from changes in the quantity of money, with a continuous tendency toward normal adjustment. "Since periods of transition are the rule and those of equilibrium the exception, the mechanism of exchange is almost always in a dynamic rather than a static condition."⁶

3. The quantity theory holds that the price level is passive and cannot itself be the source of a change in the equation of exchange. Prices, therefore, are the result of the other factors in the equation. Thus, an increase in T due to long-run economic developments tends to depress the price level unless offset by a

⁴ This, of course, is the same approach used in the "cash-balance" theory of the demand for money. The cash-balance approach is basically an explanation of the forces determining velocity.

⁵ *Ibid.*, pp. 63-69.

⁶ *Ibid.*, p. 71. Quoted with the permission of the Macmillan Company.

corresponding increase in M or V . Likewise, an increase in V tends to lead to higher prices, other things remaining the same. But there is no room in the quantity theory for the concept, held by its critics, that prices may rise for reasons completely outside the equation of exchange and thereby induce changes in the other factors needed to maintain an equilibrium.

Introduction of bank credit into the quantity theory. So far, in considering the equation of exchange, we have lumped the monetary side into a single factor MV . If we assume that all money is standard money and none is bank deposits, the use of MV as the monetary factor is satisfactory enough. Or, if M be taken to represent the *total* money in circulation whether standard currency or demand deposits, MV is sufficient. Older quantity theorists generally attempt to show that there is a direct and proportional relation between the quantity of *standard* money of a country and the price level. This, therefore, makes it necessary that special attention be given to the volume of demand deposits as related to the volume of standard money. To do this, the MV factor is modified by the addition of $M'V'$ to represent the spending of demand deposits. The expanded equation then reads $MV + M'V' = PT$. In this form, M represents standard money (including central bank notes) in circulation, and V its velocity or rate of turnover, while M' represents the volume of demand deposits and V' their velocity.⁷

Assumptions involved in using the expanded form of the equation. Use of this equation to demonstrate the relation of the quantity of standard money to the price level requires the making of some additional assumptions. New standard money that comes into the monetary system first flows into the banks, which add it to their cash reserves. The banks, eager to make profits and accustomed to carrying cash reserves that are but a fraction of their deposit liabilities, use this new cash reserve to expand their loans and deposits. To match the increase in demand deposits, the volume of hand-to-hand currency must be expanded. The expansion of bank loans and deposits must continue until the supply of new standard money is absorbed by (1) reserve requirements for new demand deposits and (2)

⁷ Generally, M' is thought of as checking accounts in banks, although it would perhaps make no difference if total deposits were used. In this equation, where the spending of money for goods is thought of as the force influencing prices, it seems unnecessary to include time deposits, which seldom if ever are spent without being first converted into currency or checking accounts. If time deposits are included as a part of M' , V' is reduced.

added requirements for money in circulation. It may be assumed, therefore, that any increase in standard money must result in a proportional increase in M and M' . A proportional shrinkage in M and M' must follow any decrease in the quantity of standard money. Hence, one may conclude that (1) M and M' bear a fixed relation to each other as determined by hand-to-hand currency requirements, and (2) that M and M' bear a fixed relation to the quantity of standard money. Thus, with other things remaining the same (that is, V , V' , and T), changes in the volume of standard money must cause proportional changes in the level of prices.⁸ But this whole conclusion is based upon the assumption that the banking system maintains a uniform ratio of deposits to cash reserves. This would require the banks to be "loaned up" to the maximum at all times. Such, however, is not the case, for during depressions loans and deposits shrink irrespective of the amount of cash reserves held by the banks. During good times, on the other hand, borrowers go to the banks for accommodation, loans and deposits expand, and the ratio of cash reserves to M' falls. It is necessary, therefore, to qualify the assertion that M and M' bear a fixed relation to the quantity of standard money by adding that a rigid relation does not exist during "transitional" periods.⁹

We must conclude that the quantity theory of money offers little in the way of an explanation of short-run or cyclical price changes in terms of the volume of standard money. Not only are the V s and T subject to variation during cyclical price movements, but M and M' , the vital monetary factors, do not maintain a constant relation to the volume of standard money.

Central banks, the volume of money, and the price level. The connection between the volume of standard money and M and M' is still more remote when central banks are brought into the picture. An increased volume of standard money in a country causes an increase in the reserves both of commercial banks and of the central bank. The central bank is in a position to extend added credit and cause a further increase in commercial bank reserves. If the central bank were to follow a uniform policy of maintaining the volume of its own credit at some fixed

⁸ To quote Fisher, "The quantity of bank deposits normally maintains a definite ratio to the quantity of money in circulation and to the amount of bank reserves. As long as this normal relation holds, the existence of bank deposits merely ~~magnifies~~ the effect on the level of prices produced by the quantity of money in circulation and does not in the least distort the effect." *Ibid.*, p. 55. Quoted with the permission of the Macmillan Company.

⁹ Cf. Fisher, *op. cit.*, pp. 55, 58-64, and 68-69.

multiple of its standard money reserves, the application of the quantity theory would be unaffected by the introduction of the central bank. But central banks normally refuse to follow such a practice, engaging instead in "offsetting" operations which nullify the effects of changes in the volume of standard money. Moreover, as lenders of last resort to the commercial banks, central banks reflect the temper of the times, rediscounting freely when business expansion appears healthy and exercising restraint when caution seems called for. Such actions magnify the amplitude of fluctuations in M and M' upon a given standard money base. The introduction of the central bank, therefore, with its power to vary the volume of commercial bank reserves when there is a given volume of standard money, reduces still further the usefulness of the quantity theory of money as an explanation of short-run price changes.

The Quantity Theory Applied Directly to M and M'

In spite of the obvious difficulties in the way of any attempt to explain short-run price fluctuations in terms of changes in the quantity of standard money, some significant efforts have been made to utilize the quantity theory and the equation of exchange in developing a realistic approach to the problem of short-run price movements. No direct connection between the quantity of *standard* money and short-run prices is sought. Instead, there is an attempt to find some significant short-run relation of a predictable and causal nature between the quantity of effective money represented by M and M' and movements of prices.

Assumptions required. If it can be shown that short-run price fluctuations are due to changes in the volume of M and M' , an important advance will have been made in the direction of solving the problem of controlling the price level. To demonstrate that changes in M and M' are responsible for short-run changes in prices requires certain assumptions. The first, a basic one found in any version of the quantity theory, is that prices are passive and the result of the other factors in the equation of exchange. The second is that short-run changes in T are accompanied by equal changes in V and V' , so that the effects of changes in T , V , and V' cancel out, leaving only M and M' to influence short-run price changes.

The theoretical case for short-run or cyclical equality of changes in V 's and T . Some writers on monetary theory have attempted to demonstrate the theoretical impossibility of short-

run changes in the velocity of money without similar and proportionate changes in the volume of transactions or trade. These theoretical analyses have been carefully examined by Professor Marget.¹⁰ He presents the view of those who believe that changes in the velocity of money cannot be responsible for causing changes in prices by quoting from their writings: "The velocity of circulation of goods must increase just as that of money increases; it is simply unthinkable that the money-side of all transactions should suddenly increase, without the goods-side following it! A purchase always presupposes a sale, a payment a receiver of payment. . . . Every increase in the circulation of money *automatically* calls forth an equally large increase in the goods-circulation."¹¹

It is not especially difficult to point out theoretical objections to the view that changes in velocity cannot affect prices. It is easy to imagine a situation in which the velocity of money might change at a rate differing from that at which goods are offered for sale. For instance, during the recovery period following a depression, there is an expansion both in money expenditures and in the volume of production and trade. But if recovery moves on into a period of inflation and price boom, speculative buying of commodities may occur, while productive facilities are fully utilized and the volume of production has ceased to grow. With rising prices, the holding of goods becomes more advantageous than the holding of cash. The increased spending, therefore, may partially be accomplished by a more rapid spending of cash balances as well as by an expansion in the quantity of money. This larger flow of money is matched against a limited supply of goods, and is the cause of

¹⁰ Marget, Arthur W., "The Relation Between the Velocity of Circulation of Money and the Velocity of Circulation of Goods," *Journal of Political Economy*, Vol. 40, 1932. Quotation by permission of the University of Chicago Press.

¹¹ Similar views appear in the writings of some American economists. See, for example, Davenport, H. G., "Velocities, Turnover, and Prices," *American Economic Review*, March, 1930, and Launsbury, R. H., "Velocity Concepts and Prices," *Quarterly Journal of Economics*, November, 1931.

Professor Marget examined another view dealing with the question of the velocity of money. This view, advanced by Holtrop, holds that changes in T , arising from changes in amount of division of labor involved in production or from the introduction of more middlemen, will automatically cause a corresponding change in the velocity of money. Marget, however, points out that the introduction of more middlemen in the line of production could not cause an increase in the velocity of money to offset the extra exchanges unless it somehow made it feasible for holders of cash to get along with smaller cash balances than before in relation to their total money outlay. He sees no reason why this should be.

the rise in prices. It makes no difference whether this larger flow of money comes from a more rapid spending of cash balances or from an increase in the quantity of money. Similarly, when the peak of the boom has passed and prices begin to fall, the most natural reaction of businessmen is to accumulate idle cash balances instead of buying goods (decreasing the velocity of money). As a result, smaller amounts of money are offered for the existing fixed supply of goods available for sale, and prices fall still further. It is evident, therefore, that changes in velocity of money may and probably do have some influence on the movement of prices.

Statistical measures of the short-run relation of V to T . By the use of statistical methods, Carl Snyder has attempted to throw more light on the equation of exchange, with particular attention to the cyclical relation between changes in velocity of spending money and fluctuations in the volume of trade. Because of the extreme difficulty of obtaining reliable figures for the velocity of spending currency which comprises the hand-to-hand circulation, he has confined his measurements to the velocity of deposit currency (V'). Estimating the normal or secular rate of growth of production and trade in the United States at about 4 per cent per year, he calculated the cyclical fluctuations in the volume of trade by correcting the actual fluctuations for the normal trend and seasonal changes. He compared the cyclical fluctuations in trade with changes in the velocity of bank deposits corrected for seasonal variations. He found a strong though not unvarying tendency for changes in trade to coincide

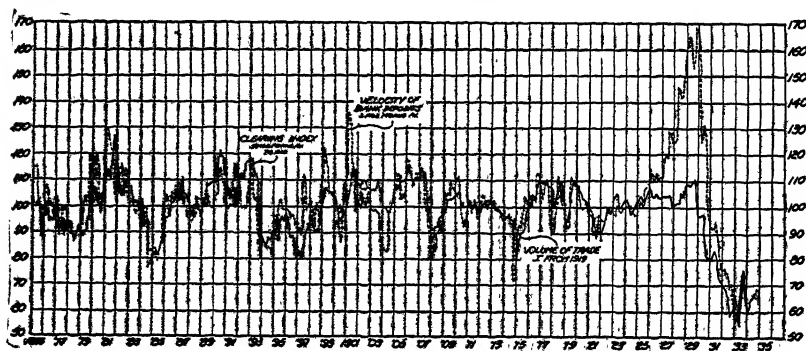


CHART 21. VELOCITY OF BANK DEPOSITS IN THE UNITED STATES AND VARIATIONS IN THE VOLUME OF TRADE (DEVIATIONS FROM LINE OF NORMAL GROWTH). (From Snyder's "The Problem of Monetary and Economic Stability," *The Quarterly Journal of Economics*, February, 1935. Reprinted by permission of the President and Fellows of Harvard College.)

with changes in velocity of deposits, both in time and in amplitude. His statistical studies, therefore, tend to support the view that V and T do in fact move together during the different stages of the cycle.

Because V and T appear to fluctuate together during the different phases of the business cycle, Snyder concludes that the quantity theory (that prices vary in proportion to the quantity of money) is substantially true in the short run and is not invalidated by the failure of V and T to show short-run stability. To further check his conclusions, Snyder compared changes in the demand deposits of national banks with changes in the general price level, and found, as might be expected in the light of his evidence concerning V and T , that there was a marked similarity of movement.¹² (See Chart 22.)

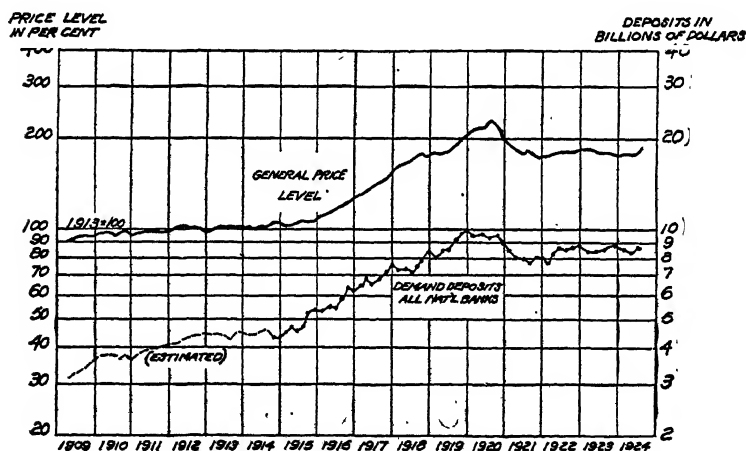


CHART 22. INDEX OF THE GENERAL PRICE LEVEL AND DEMAND DEPOSITS, AS MEASURED BY REPORTED DEPOSITS IN THE NATIONAL BANKS. Source: *The American Economic Review*, December, 1924, p. 709.

The control of prices in the light of Snyder's theory. Should Snyder's findings in regard to the equality of cyclical changes in V and T prove acceptable, they would provide a means for con-

¹²For accounts of Snyder's work on this question, see the following: "A New Index of the Volume of Trade," *Journal of the American Statistical Association*, December, 1923; "A New Index of Business Activity," *Ibid.*, March, 1924; "A New Index of the General Price Level from 1875," *Ibid.*, June, 1924; "New Measures in the Equation of Exchange," *American Economic Review*, March, 1924; "Deposit Activity as a Measure of Business Activity," *Review of Economic Statistics*, October, 1924; "The Problem of Monetary and Economic Stability," *Quarterly Journal of Economics*, February, 1935.

trolling cyclical price movements by appropriate control of the quantity of money; for, if cyclical changes in V and T cancel out, there remains in the equation of exchange only $M = P$. Therefore, if the volume of effective money were increased at the rate of 4 per cent annually to correspond to the secular trend of trade, the general price level should remain stable. By dealing directly with demand deposits (accompanied by the appropriate volume of currency for circulation), Snyder eliminates the problem of attempting to explain short-run price changes in terms of changes in the quantity of standard money or gold. Even so, there still remains the problem of controlling effectively the quantity of demand deposits and circulating currency.

Limitations on the application of Snyder's theory. Admitting for the moment the validity of Snyder's conclusions as to the cyclical equality between V and T , can one be sure that a monetary policy which increases the quantity of effective money at 4 per cent per year will insure cyclical stability of prices? Snyder's study finds only a rough equality between V and T under circumstances when M is free to expand or contract with changes in the volume of borrowing at the banks. It does not necessarily follow that V and T would be equal if control were imposed upon the volume of effective money. For example, if the volume of money is not allowed to expand during the upswing of business, the velocity of spending money is certain to behave differently from the way it would if there were no restraints upon monetary expansion. If the profit prospects appear bountiful and borrowing at banks is rigorously held in check, businessmen will probably operate on smaller cash balances than they would if loans were easily obtainable. This situation would tend to cause a speeding up of the velocity of money. Therefore, if M were not allowed to expand, changes in V would no longer be equal to changes in T . On the other hand, if it were publicly known that a stable money policy could be expected, profit prospects during a business upswing would be more modest than in the absence of monetary restraint. For this reason the velocity of money might rise less than normal during periods of business expansion. The introduction of monetary control, therefore, must cause such unpredictable changes in the velocity of money as to render useless conclusions as to the relation between V and T based on their behavior when monetary control is absent. In seeking price stability, it would be foolish to place any blind reliance upon Snyder's suggestion that the quantity of money be increased at the rate of 4 per cent annually to conform

to the secular increase in trade. Such a rule is even more questionable in view of the probability that the *actual* annual rate of secular expansion in trade does not conform to the *average* 4 per cent trend.

Criticisms of Snyder's findings. Snyder's conclusions in respect to the equality of cyclical changes in V and T have been challenged upon two grounds.¹³ First, Pigou argued that *a priori* there are good reasons for expecting V and T to change at *unequal* rates, especially in the later stages of prosperity when the expansion of production becomes difficult but V continues to feel the stimulating effect of rising prices. Second, he measured the cyclical behavior of prices and the volume of bank credit in England to discover indirectly whether or not V and T cancelled out. He compared cyclical changes in the index of wholesale prices with an index of bank credit adjusted for a 3 per cent annual secular increase in trade. He found that, during a typical cycle, the price level moved through a range of about 10 per cent while the volume of bank credit moved through a range of only about 5 per cent. His index of employment, on the other hand, which corresponds roughly to T , fluctuated by about the same amount as did the volume of bank credit. He concluded, therefore, that in the United Kingdom V must experience wider cyclical changes than T , that M and T fluctuate together and largely cancel out, and that V is an independent factor having an important influence on the price level.¹⁴

Pigou's criticisms of Snyder's findings have one serious weakness. His primary reliance was on the fact that P and M did not show cyclical changes of the same magnitude, with no attempt to make a direct comparison between V and T . It will be recalled that Snyder supplemented his conclusions in respect to the equality of changes in V and T by evidence tending to show that in the United States fluctuations in prices showed a close correspondence with changes in the volume of bank deposits. For this purpose he quite properly used his index of *general* prices rather than an index of *wholesale* prices. Clearly, an index of general prices is more significant than an index of wholesale prices for the purpose of measuring the effect of changes in the quantity of money used for all transactions. Had there been available an index of *general* English prices, it is possible that

¹³ Pigou, A. C., *Industrial Fluctuations*, London, Macmillan & Co., Ltd., 1929, pp. 164-168.

¹⁴ For a similar conclusion, see Keynes, J. M., *Monetary Reform*, 1924, pp. 91-92. Like Pigou's, his calculation was based upon wholesale prices.

Pigou's conclusions would have disagreed less with those of Snyder. Some support for the belief that in England the changes in velocity of money are similar to changes in the volume of trade is found in the study by Edie and Weaver.¹⁵

The relation of velocity of circulation of money to changes in the volume of transactions during acute depression and recovery. The behavior of the velocity of circulation of money and the volume of transactions or trade during the period 1930-1934 (see Table 62) suggest that Snyder's conclusions in respect to equality of V and T do not hold true during periods of acute depression. During this period, the ratio of V' to T fluctuated from a low of .9 to a high of 1.41, or a difference of 57 per cent. This indicates that changes in velocity of money contributed something to the price movements of the period.

TABLE 62

RATIOS OF THE VELOCITY OF CIRCULATION OF BANK DEPOSITS TO THE TOTAL VOLUME OF TRADE IN THE UNITED STATES *

	1930			1931			1932			1933			1934		
	V'	T	V'/T	V'	T	V'/T	V'	T	V'/T	V'	T	V'/T	V'	T	V'/T
Jan.	120	97	1.24	90	80	1.12	79	69	1.14	58	58	1.00	64	63	1.01
Feb.	126	98	1.28	89	82	1.08	73	87	1.09	61	57	1.07	68	64	1.06
Mar.	137	97	1.41	96	82	1.17	72	64	1.12	..	..	..	66	64	1.03
Apr.	131	96	1.34	95	84	1.13	77	64	1.20	63	60	1.05	74	65	1.14
May	127	96	1.32	93	82	1.13	67	61	1.10	65	64	1.01	65	66	.99
June	130	95	1.37	92	81	1.13	68	61	1.11	72	70	1.03	65	65	1.00
July	110	91	1.21	84	79	1.06	70	59	1.19	85	74	1.15	66	64	1.03
Aug.	106	89	1.19	81	76	1.07	72	61	1.18	71	66	1.08	61	63	.97
Sept.	108	87	1.24	85	74	1.15	72	62	1.16	67	63	1.06	..	..	..
Oct.	109	85	1.28	83	72	1.15	65	60	1.08	68	61	1.11	..	..	..
Nov.	90	83	1.08	71	71	1.00	52	58	.90	62	60	1.03	..	..	..
Dec.	97	82	1.18	76	70	1.08	60	58	1.03	62	61	1.01	..	..	..

* Source: King, W. L., *American Statistical Association Journal*, June, 1935, p. 400; quoted with the permission of the author and the publisher.

The effect of velocity of circulation of money during periods of acute inflation. Regardless of the degree to which changes in V may be offset by corresponding changes in T during ordinary cyclical movements, experience indicates clearly that changes in velocity of money may play an active part in times of acute price inflation. At such times, the value of money falls rapidly and its usefulness as a store of value declines. A "flight from the currency" develops as cash balancees become an expensive luxury and individuals' desires to hold purchasing power in money form are drastically revised downward. Because of the increased velocity of money, prices rise at a rate faster than

¹⁵ Edie, Lionel D., and Weaver, Donald, "Velocity of Bank Deposits in England," *Journal of Political Economy*, August, 1930.

that of the increase in the quantity of money. This can be clearly seen in the behavior of money and prices in Germany during the postwar inflation shown in Table 63.

TABLE 63

WHOLESALE PRICES, TOTAL CIRCULATION, AND INDEX OF MONETARY TURNOVER IN GERMANY, 1919-1923 *

	<i>Index of Wholesale Prices 1913 = 1 (Monthly Average)</i>	<i>Index of Total Monetary Circulation 1913 = 1 (End of Month)</i>	<i>Rough Index of Monetary Turnover $\left(\frac{\text{Index of Prices}}{\text{Index of Circulation}} \right)$</i>
1919 Jan.	2.62	5.69	0.46
April	2.86	6.34	0.45
July	3.39	6.90	0.49
Oct.	5.62	7.15	0.79
1920 Jan.	12.56	8.41	1.49
April	15.67	10.28	1.52
July	13.67	11.50	1.19
Oct.	14.66	12.75	1.15
1921 Jan.	14.39	12.98	1.11
April	13.26	13.38	0.99
July	14.28	14.28	1.00
Oct.	24.60	16.44	1.50
1922 Jan.	36.65	20.50	1.79
April	63.55	24.84	2.56
July	100.59	33.48	3.00
Oct.	566.00	79.85	7.09
1923 Jan.	4,626	332	13.94
April	5,988	1,090	5.49
July	183,510	7,231	25.19
Oct.	18,700,000,000	854,401,934	21.89
Nov.	1,380,150,000,000	245,107,804,000	5.62
Dec.	1,200,400,000,000	374,563,426,600	3.20

* Graham, F. D., *Exchange, Prices and Production in Hyper-Inflation: Germany, 1920-1923*, Princeton, Princeton University Press, 1930, pp. 106-106. Quoted by permission of the publisher.

The postwar inflation in Germany was in no small measure the result of the rapid increase in velocity of money, which in July, 1923, was over fifty times greater than in January, 1919. To put the matter in the language of the cash-balance approach, the purchasing power which the public wished to hold in the form of cash diminished rapidly. This event caused a sharp decline in the value of the total stock of money. In contrast to the 6 billion gold marks which constituted the German currency in 1914, the value of the 62,338 billion paper marks which

comprised the German currency on August 7, 1923, was only 80 million gold marks.¹⁶

It is inaccurate to ascribe to the increased velocity of money the whole of the increase in prices not accounted for by the increase in the quantity of money. The quantity of goods exchanged against the paper marks declined severely, partially because of a shrinkage in production and partially because of a growing practice of basing trade on the more stable foreign currencies and on barter.¹⁷

The Cash-Balance Equation

Those who view the demand for money as the desire for purchasing power in the form of cash balances require a somewhat different formulation of the relation between money and its demand from that provided by the familiar transactions equation of $MV = PT$. To satisfy the requirements of the cash-balance approach, there is needed a way to show that the value of a given stock of money is determined by and is equal to the amount of purchasing power which the public insists that it have.

A familiar form of equation used to demonstrate the cash-balance approach is that popularized by Keynes,¹⁸ in which:

n is the number of monetary units.

p is the index of prices.

k is the volume of consumption units over which the public wants purchasing power in the form of money.¹⁹

In its simple form, the equation is:

$$n = pk.$$

If k is a constant, a change in n must necessarily lead to proportional changes in p .

¹⁶ This figure is obtained by dividing the total number of paper marks in existence by the number of paper marks required to purchase a theoretical gold mark, measured in terms of the existing gold dollar exchange rate. Another method of computing the change in the value of the total currency involves dividing the total amount of currency by the index of prices based on 1914. Graham, F. D., *Exchange, Prices, and Production in Hyper-Inflation: Germany, 1920-1923*, Princeton, Princeton University Press, 1930, pp. 101-106.

¹⁷ *Ibid.*, pp. 173-174.

¹⁸ Keynes, J. M., *Monetary Reform*, 1924, pp. 84-85. For an earlier and somewhat different form of cash-balance equation, see Pigou's *Essays in Applied Economics*, p. 177, reprinted in part from the *Quarterly Journal of Economics*, November, 1917.

¹⁹ It is evident that the term "consumption unit" is ill-chosen, for cash balances are held both by consumers and by businessmen and consequently must purchase a certain volume of things in general and not mere consumption goods alone.

In order to bring bank credit into the equation, two new terms are added:

k' is the volume of consumption units over which the public wishes to hold purchasing power in the form of bank deposits.

r is the ratio of standard money bank reserves to bank deposits.

Then, the equation becomes:

$$n = p(k + rk').$$

In this form, the equation shows that when r , k , and k' are constant, changes in n must necessarily result in corresponding changes in p . It will be readily seen that any change in r , which changes the volume of bank deposits supported by a given amount of standard money reserves, will affect p . Likewise, any change in the proportion of k to k' or in their absolute size must correspondingly change p without any change in n .

In this equation k and k' represent real commodities and services which the existing stock of money in circulation and bank deposits must be able to purchase. The size of k and k' is some fractional part of the total transactions which are settled in terms of money during any given period, such as one year, for instance, and is therefore related to the total real income of the community. Its absolute size is determined by size of the fraction of the total annual transactions which the public thinks it advantageous to hold in the form of cash balances. Because the public is able to adjust the buying power of its existing cash balances only by varying its rate of spending them, the magnitude of k is directly effective in determining the velocity of money in the transactions equation $MV = PT$. It follows, therefore, that k and k' are quantities of real goods and services over which the public wishes to hold buying power in the form of cash balances. The size of these quantities is determined both by the fraction of the total transactions which people wish to command in terms of cash balances (obviously a varying fraction) and by the magnitude of the total transactions themselves. In other words, k and k' reflect the forces which determine both V and T in the transactions equation of $MV = PT$.

Another commonly used cash-balance equation is that of Professor D. H. Robertson:

$$M = PKT, \text{ or } P = \frac{M}{KT}.$$

In this equation, M is the quantity of money held by the public, T is the total real volume of transactions settled in terms of money during a given period of time, and K is the fraction of T which the public wishes its money to purchase.²⁰ As in the Keynes equation, $n = pk$, the existing stock of cash balances must embody purchasing power over a given quantity of "real" goods and services. Its advantages over the Keynes equation are (1) that it throws light upon the determinants of Keynes' " k ," and (2) that it can be related to the transactions equation simply by observing that K in this case is the reciprocal of V in the equation $MV = PT$.

A comparison of the transactions equation with the cash-balance equation. The transactions equation, $MV + M'V' = PT$, quite obviously is a statement that, during a given period of time, the money spent equals the value of all the transactions. It is based on the transfer of money against other things. In contrast, Keynes' cash-balance equation, $n = p(k + rk')$, gives merely a kind of instantaneous cross-section view of the situation. It is as if all transactions were halted at the end of the day and an investigation launched into the monetary affairs of the public. This investigation discloses (a) that the public is holding a given volume of cash balances in the form of currency and bank deposits, and (b) that, if these cash balances were spent, they would purchase a given volume of goods and services (k and k'). Similarly, $M = PKT$ states that M must purchase the goods and services represented by KT . Thus, the transactions equation covers a period of time, while the cash-balance equation pictures the situation at a given instant.²¹

There is, in fact, no real difference in the result obtained by the two approaches. Those who prefer the cash-balance to the transactions equation do so because they believe that it gives a more realistic approach to the "demand" for money. They hold that the demand for money cannot be properly thought of as the offering of all the goods, services, and so forth, against all the money supply. Instead they prefer the view that money, like other things, is wanted for its utility, which in this case is its purchasing power. The cash-balance approach focuses attention directly upon the volition of the users of money in respect to the

²⁰ *Money*, rev. ed., New York, Harcourt, Brace & Co., 1929, p. 195. For a criticism of the use of k as "real balances" in the cash balance approach, see Marget, A. W., *The Theory of Prices*, Vol. I, New York, Prentice-Hall, Inc., 1938, Chap. XV. He holds that k should be the proportion between outlay of any given type and the cash balance held against that outlay.

²¹ For a contrary view, see Marget, *op. cit.*, pp. 424-426.

amount of purchasing power which they wish their stock of cash to have. This, it is said, is superior to looking directly at the velocity of circulation of money, about which there is no direct explanation.²² Further, Keynes' cash-balance equation, which introduces the demand for bank deposits, $n = p(k + rk')$, calls direct attention to a vital qualification of the quantity theory of money. Prices will not vary in proportion to the quantity of standard money unless r , the ratio of bank reserves to deposits, as well as k and k' , is constant.

Those who prefer the transactions equation object to the failure of the cash-balance approach to focus direct attention upon the vital point that the velocity of spending money may be a determining factor in the price level. Instead, the idea of velocity must be implied from k . Another reason for preferring the transactions equation is its adaptability to statistical work. Statistical equivalents of M' , V' , P , and T are obtainable with reasonable accuracy. In contrast, no direct statistical equivalent for k or k' can be found, and any figures to represent them can be obtained only by indirect calculation.²³

It is well to remember that both types of equations of exchange are merely "truisms" or statements of identities from which one may embark upon a theoretical explanation of the relation between money and the price level. Each equation has merits of its own, and each contributes something to the understanding of monetary problems. They should be thought of as complementary rather than contradictory.

Limitations of the Equations of Exchange

Criticisms of the equations of exchange. Both the transactions equation, $MV = PT$, and the cash-balance equation, $n = pk$, are useful devices for analyzing the relation between the quantity of money and the price level. They are essentially the same in that both relate the value of a given quantity of money to the value of a given quantity of goods, and services. Like all devices, they fall short of perfection and have been subjected to considerable criticism.

The basic criticisms which have been made of the equations of exchange are these:

1. They are static rather than dynamic in character: Correct as far as they go, they fail to provide any direct clue to the

²² Cf. Pigou, *op. cit.*, p. 179.

²³ For an example of such a calculation, see Keynes, *Monetary Reform*, pp. 91-92.

process whereby changes in the terms of the equations actually occur. They furnish no adequate explanation of the forces which institute changes, particularly those of the short run. This is, indeed, a serious criticism. The economist or the statesman, armed with nothing better than the vague assurance that in the long run price movements correspond to changes in the quantity of money, is sadly lacking in the equipment needed to approach that most fearful of modern economic demons, the business cycle. As Keynes has well said, "In the long run we are all dead"; it is in the short run that our most vital interests often lie. Even though one accept Snyder's view that short-run changes in V and T cancel out, leaving $M = P$, the equations offer no satisfactory answer to the question of whether, as commonly assumed by the quantity theorists, changes in M , particularly in the form of bank deposits, are determined by independent causes and result in changes in P , or whether independent causes induce changes in P which in turn result in appropriate changes in the volume of M . Moreover, the equations furnish no clue to the very plausible possibility that nonmonetary forces within the business structure operate simultaneously upon both M and P to cause corresponding changes in each.

2. Both equations of exchange necessarily deal with the price level in a very general sense. For instance, in the transactions equation, $MV = PT$, P is the price index, weighted according to the price per unit of each constituent of all transactions (T) which are settled with money. But T is a conglomerate mass made up of goods sold at retail and wholesale; payments of wages; rents; interest and profits; and securities, land, and old capital goods exchanged. Because of this, P must be an index of "prices" of this same conglomerate mass. But for purposes of economic analysis and control, something more is needed than an assurance that, other things being equal, a change in the quantity of money will cause a proportional change in the average price level of the heterogeneous collection of items which comprise T . Furthermore, T itself is a highly variable and largely unpredictable thing, embodying not only ordinary industrial and commercial transactions but also speculative transactions.²⁴ Even though P , properly defined, may be explained in relation to M , V , and T , the equation is so inclusive that it fails to give a definitive answer to the primary problem of monetary theory, namely, why commodity prices change as they do.

²⁴ Cf. Hawtrey, R. G., *Currency and Credit*, rev. ed., London, Longmans, Green & Co., 1928, pp. 35-40.

Another objection sometimes raised to the price level explained by the equations of exchange is that it gives little direct help in explaining the movement of prices of consumers' goods. Not only does P include the prices of purely speculative and capital transactions, but also it is heavily loaded with wholesale prices and wage payments, which only indirectly and remotely reflect the prices of goods bought by consumers.²⁵

²⁵ Keynes definitely takes the position that the purchasing power of money ought to be defined only as the power of money to buy goods and services for consumption. See his *Treatise on Money*, Vol. I., p. 54. Also see pp. 76-79 for the distinction between what he calls the "Currency Standards" or price level indicated by the transactions and cash-balance approach, and the "Consumption Standard" or price level of consumption goods. For his discussion of the limitations of the transactions and the cash-balance equations, see the *Treatise*, Chapter 14.

CHAPTER XXXIII

THE INCOME APPROACH TO THE VALUE OF MONEY

SOME of the limitations of the quantity theory equations for use in explaining changes in the level of prices were noted in the last section of the preceding chapter. It was pointed out there that not only do these equations offer little assistance in explaining the process through which changes in prices materialize, but also they fail to direct attention to the forces which determine the prices of commodities and services as contrasted to the prices of all transactions settled with money. Some students of monetary theory believe that the "income approach" may be used to avoid some of the limitations of the more conventional quantity theory approach.

The income approach to the value of money. Essentially, the income approach is based on the fact that the spending of money income for goods and services determines their price. The pricing process is thought of as the matching of a flow of money income against the flow of goods and services produced and sold in the market. Unless corresponding changes in the flow of goods and services occur, any change in the flow of money income will cause a change in the price level.

The stream of money income is spent either for consumers' goods or for investments. Income spent for investment may be used to purchase securities or capital goods themselves. The manner in which money income is disbursed, therefore, affects the price levels of consumers' goods and capital goods. Obviously, the spending of net income is not the same as the spending carried on between businessmen during the process of production. For this reason, the income approach is basically different from the transactions approach. According to the former, the money income for a period is spent for the real income of goods and services, and thereby prices are determined. The transactions approach, however, states that the total expenditures of all

kinds, not merely the spending of net incomes, determine the value of *all* transactions, including those of an intermediate business and financial nature.

Equations expressing the income approach. To express the income approach to the value of money, one may say:

$$P = \frac{NI}{R},$$

in which NI represents the national money income for the period, R represents the volume of real income in goods and services, and P is the price level of such goods and services.

But the above equation fails to offer any clue to the causes behind the prices of consumers' goods as contrasted with capital goods. It is, therefore, more useful to take into account the fact that part of the money income is spent for consumers' goods and part for capital goods. Thus, if

NI is the total money income,

S is the money income saved,

$NI - S$ is the money income spent on consumers' goods,

RC is the volume of consumers' goods,

RB is the volume of capital goods,

then $\frac{NI - S}{RC} = \text{Price of consumers' goods},$

and $\frac{S}{RB} = \text{Price of capital goods}.$

But equations of this kind are in themselves inadequate and unsatisfactory. As they stand, they assume that all S is invested or spent on capital goods, an assumption which is not always true. Further, they give no direct answer to the questions: (1) what determines the size of the national money income NI , and (2) what determines the proportion which will be spent on consumers' goods and what proportion will be invested. Each of these questions requires exploration if the income approach is to be useful in analyzing the causes of price changes.

The Relation of the Total Money Income to the Quantity of Money

The total money income must necessarily bear some discoverable relation to the quantity of money. It is reasonable to suppose that an expansion in the quantity of money will cause an increase in the flow of money through the economic system and,

eventually, an increase in the money incomes of individuals and business firms. One may show this relationship by comparing the size of the total money income with the stock of money.

The income velocity of money. In the transactions equation, $MV = PT$, the velocity of money represents the average number of times that the stock of money is spent in the market for T . Total expenditures of all kinds (MV) divided by the stock of money (M) gives the average transactions velocity. To a very large extent, such money expenditures are used for business purposes, providing for trade between businessmen and for financial transactions. Part of these expenditures become net money income to the receivers. Income velocity is the average number of times that the average money stock appears as money income during any given interval of time. To calculate this, one divides the total money income for the period by the total average stock of money.¹

The income velocity of money, that is, the frequency with which the average stock of money reaches the income receivers, depends primarily upon the time involved in the production process, the number of exchanges which are carried on between different producers during the process of production, and the size of cash balances which businessmen and others hold in comparison to their average expenditures. For instance, an increase in the length of time required to carry through the processes of production lengthens the time interval between the spending of money by consumers and its re-emergence as income at the end of the circuit. Conversely, a shortening of the productive process tends to increase the income velocity of money by hastening its flow. An increase in specialization by individual firms increases the number of exchanges required to produce a given volume of goods, and delays the circuit flow of money from consumer to consumer. The reason for this is found in the fact that an increase in the number of business firms participating in the line of production tends to increase the aggregate cash balances required. Therefore, the result must be a slowing down of the rate

¹ "Income velocity" is sometimes referred to as "circular velocity." Cf. Angell, James W., *The Behavior of Money*, New York, McGraw-Hill Book Co., 1936, Chapter V. To use his approach, if NI is the national money income, C the circular velocity of money, and M the stock of money, then $C = \frac{NI}{M}$. *Ibid.*, p. 135. He suggests that, properly speaking, the flow of money is "circular" only when advancing the "unidirectional flow" of goods and services, and therefore most of the financial classes of transactions are outside the flow of payments which influence the size of money incomes. *Ibid.*, pp. 132-133.

at which the average unit of money appears as income. Similarly, any other change in the need for cash balances retards or accelerates the circuit flow of money from the consumers' hands through industry and back again.²

There is evidence tending to establish the fact that income or circular velocity of money has a marked tendency toward stability. During the period 1909-1929, the annual income velocity of money in the United States varied from a high of 3.40 in 1913 to a low of 2.76 in 1921. The maximum drop from the highest to the lowest velocity, amounting to only 18 per cent, is remarkably small. During the period 1929-1932, however, income velocity fell to 1.86, or a decline of 45 per cent from the high of 1913. The income or circular velocity of money for the years 1909-1932 appears in Table 64.

TABLE 64

THE CIRCULAR VELOCITY OF MONEY, 1909-1932*

Year	Circular Velocity	Year	Circular Velocity	Year	Circular Velocity
1909	3.25	1917	3.10	1925	3.21
1910	3.13	1918	3.04	1926	3.29
1911	3.01	1919	2.81	1927	3.14
1912	3.20	1920	2.99	1928	3.14
1913	3.40	1921	2.76	1929	3.05
1914	2.97	1922	3.03	1930	2.70
1915	3.11	1923	3.25	1931	2.26
1916	2.91	1924	3.21	1932	1.86

* Quoted by permission from Angell, James W., *The Behavior of Money*, New York, McGraw-Hill Book Co., 1934, p. 190. These calculations are based upon estimates of national income by W. I. King in *The National Income and Its Purchasing Power* and those of Simon Kuznets, *National Income, 1929-1932*. The stock of money is calculated from reported amounts of currency in circulation plus net demand deposits adjusted to avoid duplication.

The importance of the concept of income velocity. To the extent that income or circular velocity is stable, it may be said that variations in money incomes are in proportion to changes in the supply of money. In spite of the sharp downward trend in income velocity after 1929, Professor Angell believes that, normally, income velocity tends to be reasonably stable. He is supported in this view by Lauchlin Currie.³ In still further support of his belief in the stability of income velocity, Angell found that, between 1909 and 1929, variations in national money in-

² Cf. Angell, *Behavior of Money*, pp. 139-144.

³ See his *Supply and Control of Money*, Cambridge, Harvard University Press, 1934, p. 6.

come corresponded closely with variations in the volume of money and credit.⁴

This analysis has added one important link to the so-called "income approach" by establishing the relative stability of the income velocity of money. It strongly suggests that money incomes may be expected to fluctuate roughly with changes in the volume of money. In this connection, "money" refers to currency in circulation plus net demand deposits rather than to standard money. The conclusion concerning the relation between the quantity of money and the volume of money income, derived from the concept of a stable income velocity, is of greater significance than Snyder's studies, which seek to establish correspondence between the cyclical variations in V and T in the equation $MV = PT$. At best, Snyder's results can show only that changes in the volume of circulating money are accompanied by proportional changes in the general level of prices of *all items* contained in T .

*Relation Among the Quantity of Money, Money Incomes,
and the Price Level: Hawtrey's Approach*

In what way, one may ask, are the changes in the quantity of money, money incomes, and the level of prices brought about? A very useful analysis of the problem has been provided by R. G. Hawtrey.⁵ His analysis is based fundamentally upon the cash-balance approach. He sees three basic reasons why individuals wish to keep reserves of purchasing power in the form of cash: (1) the failure of income and expenditure to move together; (2) the necessity of being prepared for unforeseen emergencies; and (3) the necessity of accumulating savings awaiting investment. Traders require balances for similar reasons, but, owing to the superior opportunities for borrowing at short term at banks, the traders require smaller cash balances relative to the amount of cash expenditures than do individuals. For each individual, the appropriate cash balance will bear some definite proportion to his income, while traders' cash balances are some proportion of their total expenditures. The demand for money is found in the requirements of the community for reserves of purchasing power.

⁴ Angell, *op. cit.*, p. 145, Chart XXII.

⁵ For an account of his viewpoint, see his *Currency and Credit*, 3rd ed. 1928, Chapter IV; and *The Art of Central Banking*, London, Longmans, Green & Co., Ltd., 1932, Chapter III.

The unspent margin. Hawtrey refers to the total stock of money (consisting of currency in circulation and bank deposits) as the *unspent margin*. It follows, therefore, that the unspent margin is synonymous with the sum total of consumers' and traders' cash balances. Moreover, it must rise or fall with increases or decreases in loans and investments of banks.⁶

Traders' outlay, consumers' incomes, and prices. Changes in the value of money are explained in the following manner. Whenever opportunity to borrow at profitable rates arises, traders (synonymous with businessmen) will increase their loans at the commercial banks. The resulting increases in traders' cash balances will be rapidly paid out in the purchase of goods and services and shortly must come into consumers' hands as income in the form of wages, salaries, interest, rents, and profits. This result must be expected, since the trader will be unlikely to borrow to increase his idle cash balance. Therefore, an increase in bank credit resulting from traders' borrowings must lead to a corresponding increase in the traders' outlay (or expenditures) and a corresponding increase in consumers' incomes.

Consumers' incomes, therefore, are likely to vary with changes in the volume of bank credit, rising and falling in more or less exact proportion except as traders themselves happen to absorb part of the change by varying the size of their cash balances. The outlay (expenditures) of consumers need not necessarily vary exactly with income, since changes in the size of their cash balances may occur. For example, an increase in money income may lead the consumer to indulge in the luxury of a larger cash balance; in this case, his increased outlay will be somewhat less than the increase in income. On the other hand, prospects of rising prices may encourage him to spend his cash balance down to a thinner level; this would cause his increased outlay to be somewhat greater than the increase in his income.

The consumer's outlay is spent on (1) consumption goods and (2) capital goods or investments. The proportion of each type of outlay will depend upon his saving propensities. The aggregate volume of consumers' outlay is closely related to consumers' incomes, which in turn depend upon traders' outlay. Consumers' outlay is viewed as the significant factor in the determination of the price level, since it directly controls the prices of con-

⁶ *Currency and Credit*, 3rd ed., pp. 34 and 43.

But in another connection, Hawtrey uses unspent margin in the sense of the *relation* of cash balances to consumers' and traders' expenditures. *Ibid.*, pp. 58-59.

sumers' goods (these prices in turn control wholesale prices) and indirectly, through the prices of securities, controls the price level of capital goods.

The degree to which increased consumers' outlay may affect the price level depends upon the degree to which it finds the production facilities of the community occupied. If adequate unused capacity exists, increased consumers' outlay reduces traders' stocks of goods and promotes an increase in production with little if any effect on prices. But if consumers' income and outlay continue to rise, sooner or later the production capacity of industry becomes utilized (not necessarily to the same degree in all industries), and expanded money outlay can only result in increased prices.

Thus, in a general way it is possible to trace the course of an expansion in bank credit through traders' outlay into consumers' income and outlay, until it finances either an expansion of production, higher prices, or both. To what extent is it possible to hold that changes in prices are proportional to changes in the volume of bank credit or unspent margin? We have already seen that to some extent the effect of more bank credit is absorbed in greater production. To this extent more money does not lead to higher prices. An expansion in bank credit may be accompanied by a more than proportional expansion in traders' outlay, consumers' income, and consumers' outlay. This may arise from a failure of traders' and consumers' demand for cash balances to expand in proportion to their outlay. When this occurs, the new cash created by the expansion of bank loans and investments fails to settle down readily into cash balances, but instead is spent at an abnormally rapid rate. In other words, the velocity of money has increased. Thus the outlay of cash over a given interval of time may increase faster than does the volume of cash balances or unspent margin. Particularly is this true when rising prices reduce the attractiveness of holding cash. On the other hand, shrinking bank credit will cause traders' outlay, consumers' incomes, and consumers' outlay to decline. When prices fall, the demand for cash balances tends to rise, so that traders' and consumers' outlay may decline relatively more than the shrinkage in bank credit.

*The Inequality of Saving and Investment as the
Cause of Changes in the Price Level*

Keynes has criticized both the transactions equation ($MV = PT$) and the cash-balance equation ($n = pk$) on the grounds that they fail to indicate the different monetary factors through

which "the causal process actually operates during a period of change." He therefore proposed to analyze the "causal process by which the price level is determined and the method of transition from one position of equilibrium to another."⁷ The theories of money which have been developed by the use of the older equations furnish a clue to the forces which establish a given level of prices. Keynes, like Hawtrey, however, is interested in the causes which induce *changes* in the price level. Further, he is concerned with the problem of explaining the movement of prices of consumers' and capital goods as distinguished from general prices.

Why saving and investment become unequal. Because money savings and money investment result from the decisions of different individuals, there is always the possibility that they will not be equal.⁸ Particularly is the volume of investment subject to change with changes in the profit expectations of businessmen. "The attractiveness of investment depends on the prospective income which the entrepreneur anticipates from current investment relative to the rate of interest which he has to pay in order to be able to finance its production."⁹ Whenever the forces operating upon the volume of saving and the volume of investment make them unequal, equilibrium is disturbed, prices change, profits or losses appear, and entrepreneurs expand or contract output.

The incentive to invest. "Investment" consists in spending money for the purchase of capital goods. These capital goods may be of a durable sort (tools, equipment, or buildings) or may be short-lived (merchandise and raw materials). Any investment, therefore, causes a flow of money income into the hands of the owners of the factors of production used in making capital goods. Entrepreneurs will invest in capital goods only when they anticipate that their actions will result in some gain.

Two basic considerations determine the extent of gain to be

⁷ Keynes, J. M., *Treatise on Money*, New York, Harcourt, Brace & Co., 1930, Vol. I, p. 133.

⁸ "Saving is the act of the individual consumer and consists of the negative act of refraining from spending the whole of his current income on consumption. Investment, on the other hand, is the act of the entrepreneur . . . and consists in the positive act of starting or maintaining some process of production or of withholding liquid goods." *Treatise*, Vol. I, p. 172. Also, "The business of saving is essentially a steady process. If there are disturbances in the economic world, these by affecting prosperity may react on the rate of saving. But a disturbance will seldom or never be initiated by a sudden change in the proportion of current income which is being saved." *Ibid.*, p. 280. Reprinted by the permission of Harcourt, Brace & Co.

⁹ *Ibid.*, p. 154.

realized and, therefore, the volume of new investment appropriate for any given time. The first of these considerations is the income which the particular investment may be expected to yield. The magnitude of actual yield from a given investment depends on (1) the absolute productive efficiency of the particular capital goods, (2) the law of variable proportions or diminishing productivity, and (3) the behavior of prices. When the technical efficiency of capital is high, its yield or marginal productivity tends to be high also. When capital is scarce relative to other factors, the yield on new capital is relatively high. Of greater importance than either efficiency or relative scarcity in determining the *variations* in yield on new capital investment are the changes in prices. When prices are rising, the profitability of new capital investment is magnified because of lagging costs. When prices fall, on the other hand, lagging costs diminish and for a time may cause a complete disappearance of prospects of net earnings from new capital investment.

The second basic consideration affecting the desirability of making new investments in capital goods is the cost of obtaining funds for investment, that is, the rate of interest. Whether paid to the purchaser of securities or to the entrepreneur himself for the use of his own funds, the interest rate constitutes a cost of making new investments which must be deducted from the *net* yield on capital in order to determine whether or not that investment is to be worth while. New investment will not be pushed beyond the point where the expected marginal yield is just equal to the rate of interest. An examination of the forces operating to determine the interest rate must be postponed until Chapter XXXV. It is sufficient for our present needs to recognize the part played by the rate of interest in the determination of the willingness of entrepreneurs to invest in capital goods.

The flow of money income when saving and investment are equal. The flow of money income in economic society may be thought of as originating in the money payments made by entrepreneurs to the factors of production. These money payments comprise all the costs incurred by the entrepreneurs in the way of wages, interest, rents, and owners' profits. So long as this income passes regularly and uninterruptedly through the hands of its receivers and back to entrepreneurs for the purchase of industrial output, the process of exchange moves smoothly along, the level of money income remains constant, and there is no reason, arising from the behavior of this income, why changes in prices or in output should occur. That part of income which is spent for consumers' goods moves readily back to

entrepreneurs and, assuming that they do not allow their inventories to decline, will pass on through their hands and become income again. If that part of income which is saved is invested in capital goods in a prompt and regular manner, that is, if money savings and money investment are equal, these savings become the income of the factors of production engaged in making capital goods. It will be helpful to think of the continuous flow of production and income as being broken up into periods of such size that the income of one period cannot be spent or disposed of until the next period. Then the money income of what we may call Period I passes on to the entrepreneurs and becomes the costs of production and the money income of Period II. So long as the circuit flow of money income is neither augmented by dishoarding or monetary expansion nor reduced by hoarding or repayment of bank loans, the money income of each succeeding period remains the same. In other words, so long as money savings of a period equal the money investments of that period, the money income of the next period will remain equal to the income of the preceding period.¹⁰

The behavior of money income and prices when investment exceeds saving. Let us assume a fall in the market rate of interest which increases the attractiveness of new investment. Businessmen therefore expand their new investments at an accelerated rate and to the point where the expected marginal productivity of new capital equals the rate of interest. Voluntary money saving will not increase but, rather, will be discouraged by the lower rate of interest. If, therefore, money saving and money investment had previously been equal, the expanded rate of new investment can be carried on only by increased borrowing by businessmen at the banks or by a dishoarding of previously idle balances. The increased rate of new investment must, therefore, be accompanied by an increase in the quantity of money flowing into incomes. In other words, *MV* of the transactions equation must rise.

In order to visualize this process more clearly, we may again make use of the method of period analysis. Let us assume that the total income for Period I is \$1,000, of which three-fourths, or \$750, is to be spent on consumers' goods and one-fourth, or \$250, saved. Because of the attractiveness of new investment, during the next period entrepreneurs wish to invest \$350 instead of the

¹⁰ The analysis based upon the use of successive periods is presented by D. H. Robertson in his article "Saving and Hoarding," which first appeared in the *Economic Journal*, September, 1933, and is reprinted in his *Essays in Monetary Theory*, London, P. S. King & Son, Ltd., 1940.

\$250 made available by the savings out of the income of Period I. In other words, investment during Period II will exceed savings by \$100. There are two sources from which this additional \$100 may be obtained for new investment: dishoarding and an expansion in the volume of money. First, entrepreneurs may dishoard some of their previous hoardings of cash. Further, they may sell securities to persons who have been hoarding cash while awaiting more favorable investment opportunities for past money savings. Second, entrepreneurs may obtain new cash funds created by an expansion in bank credit. These new funds may originate in two separate ways. (1) Entrepreneurs borrow directly from banks to obtain funds for working capital, that is, to finance the expansion of inventories and to some extent, under modern practice, to finance the purchase of tools and equipment. The growth of term loans is an example of borrowing at banks to expand fixed working capital. (2) Funds which result from bank credit expansion reach the entrepreneur when investment

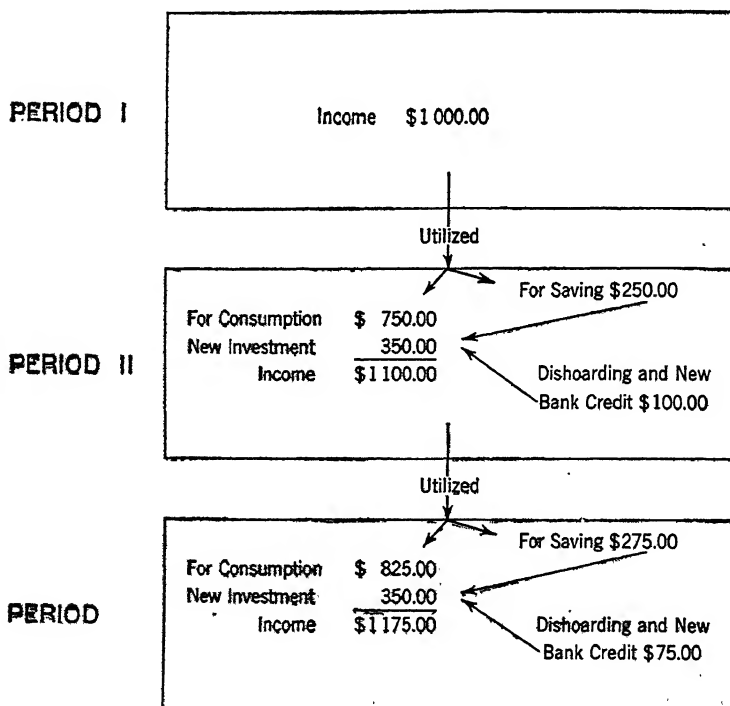


CHART 23. WHEN INVESTMENT EXCEEDS SAVING AND MONEY INCOME RISES. (Assuming investment in each period as \$350 and saving as 25 per cent of income.)

bankers, investors, and speculators borrow at banks to finance the carrying of securities and when banks purchase securities outright from investors, who then replenish their security holdings by the purchase of new issues. As a result of the spending on new investment during Period II of \$100 more than the funds provided by money saving, the income for Period II will be expanded by the amount of the excess of investment over saving. In other words, income for Period II becomes \$1,100. So long as money savings are insufficient to provide the funds required for new investment, the money income for any given period will exceed that of the preceding period by an amount equal to the excess of investment over saving. This may be clearly seen in Chart 23.

The expansion in money flow which accompanies the expansion in new investment in excess of current saving moves first into the capital goods markets, where it leads (a) to a rise in prices of capital goods and (b) to an increase in their output. As soon as the expanded money expenditure is made on capital goods, it appears as increased money income of consumers, which in turn leads to increased expenditure for consumers' goods. The result will be some rise in prices and a tendency for the output of such goods to increase. To the extent that their supply expands as new investment expands, prices of consumers' goods will not be affected, while a delayed expansion in their supply will lead to a decline in prices after an initial rise.

Secondary expansion. The rise in prices of consumers' goods above costs of production increases profits of the businessmen engaged in their production. This improved outlook raises the anticipated productiveness of new capital and furnishes another impetus to an expansion in the rate of investment. Investment will tend to exceed saving by still greater margins, new credit expansion will occur, and the expansion reaches the "Secondary Phase."¹¹ This is the expansion or boom phase of the business cycle. The excess of investment over saving gives businessmen increased profits, which in turn encourage a still greater expansion of investment. This cumulative process goes on until brought to an end by forces which become more and more powerful as the boom reaches its later stages.

Forces bringing expansion to an end. During the earlier stages of the expansion period, the increased consumer income arising from the expansion in investment is being spent on a rela-

¹¹ Cf. Keynes, *Treatise*, Vol. I, pp. 287-288.

CHAPTER XXXIV

CHANGES IN EXPECTATIONS AND OUTPUT: THE MULTIPLIER

The Equality of Saving and Investment

Keynes' treatment of saving and investment in his "Treatise." In his *Treatise on Money*, Keynes developed the idea that saving and investment become unequal and, because they do, changes in the output and in the price level take place. A decline in the rate of interest or an increase in the prospective marginal productivity of capital will expand the rate of new investment, while a rise in the interest rate or a decline in the prospective marginal productivity of capital will tend to reduce it. Whenever investment exceeds current saving, new money is created (or old money is dishoarded) to pay for the excess investment, prices rise, profits appear, and output expands. Conversely, when investment is less than saving, money is hoarded, prices fall, losses to businessmen appear, and output shrinks.

Keynes' later view of saving and investment. Although his general conclusions are substantially the same, Keynes has modified his approach in his later book.¹ Here he abandons the use of his Fundamental Equations which purported to state the determinants of the level of prices, and concentrates his attention upon the forces that he believes to be responsible for cyclical variations in business activity and production. In this analysis, price level changes enter the picture only incidentally, for they are the results of more fundamental forces operating to cause changes in output.

He abandons the position, previously taken in his *Treatise*, that investment and saving become unequal and thereby introduce price, output, and income changes. Instead he uses "common sense" definitions in which (1) "saving" means the excess

¹ *The General Theory of Employment Interest and Money*, New York, Harcourt, Brace & Co., 1936.

of income over expenditure on consumption and (2) "current investment" is equal to the value of that part of current output not consumed. By definition, then, saving and investment are equal,² for it cannot be denied that the cost value of the real goods produced but not consumed must equal the cost value of the goods added to the stocks of capital goods. This, of course, does not mean that current savings of money income must equal the current money investments. Hoarding of cash savings may occur, in which case saving exceeds investment; and dishoarded cash and newly borrowed bank credit may be spent on new investment in excess of current saving. Using as a starting point his second concept, that saving must equal investment, Keynes develops an explanation of fluctuations in output, employment, and (incidentally) prices which deserves our examination.

The marginal efficiency of capital. It is, of course, a commonplace of economic analysis that business activity rises and falls as businessmen expand or contract their expenditures. In their hands resides the power to expand or contract output, employment, and incomes. Their decisions, of course, are not governed by caprice or accident but are directly related to the expectation of profit.

When businessmen expand their output, they necessarily expand their supply of capital, whether in the form of liquid stocks or in durable fixed form. Therefore, their decisions to expand output must necessarily be the result of advantages expected to accrue from these additions to their capital supply. To describe this basic factor in the decisions of businessmen, Keynes uses the term "marginal efficiency of capital." By this he means the "relation between the prospective yield of a marginal capital asset and its supply price or replacement cost."³ Thus, it is the businessmen's expectations of the future income from the marginal units of capital compared with the present cost of obtaining that capital (that is, the current rate of interest) that determine whether or not they expand their investments. When, therefore, the marginal efficiency of capital is above the rate of interest, investment, incomes, and employment will rise. On the other hand, when the marginal efficiency of capital is below the interest rate, investment will fall, and with it output and employment. Variations in output are dependent upon changes in expectations

² Cf. his *General Theory of Employment*, Chapter VII.

³ Quoted, with permission, from *General Theory of Employment*, p. 135. For a discussion of the marginal efficiency of capital, see his Chapter XI.

as to the marginal efficiency of capital and upon changes in the interest rate.

The expansion of new investment. Let us assume that the willingness of businessmen to make new investments is increased because of a fall in the rate of interest, a rise in the marginal efficiency of capital, or both. If previous to this change money savings have been equal to the current rate of investment, the increased rate of investment can occur only through an expansion in total money expenditures. This increase in spending may be accomplished by dishoarding (or increasing the velocity of money) or by an expansion in the volume of bank credit.

By this new spending, the businessmen obtain additional stocks of capital goods, while those individuals who are connected with the capital goods industries receive increased money incomes. Until they spend this increased money income, such individuals are in the position of having advanced capital goods to the businessmen in return for the cash being held. They are, therefore, temporarily engaged in saving. But this new money income will hardly be allowed permanently to fatten the cash balances of the receivers; especially is this true of wage earners previously unemployed. To a very large extent, the new money income which results from the increased rate of investment will be spent promptly for consumption goods. This in turn causes an increase in the output, employment, and incomes in the consumption goods industries.

If we again assume that the new incomes, this time received in the consumption goods industries, are not allowed to lie idle in cash balances but are spent for more consumption goods, the stimulating effect on output, employment, and incomes continues. But while this is going on, someone is holding the increased cash, and each holder is temporarily contributing to the supply of capital.

The Multiplier: Phase I

We are now ready to examine the concept of the "Multiplier" which, in one way or another, has assumed an important place in contemporary thinking on the business cycle.⁴ If we start from equilibrium when saving and investment are equal, the "Multiplier" may be visualized as the ratio between the volume of new investment in excess of current saving and the volume of new income which results therefrom.

⁴ For a statement of Keynes' views on the "Multiplier," see his *General Theory of Employment*, Chapter X.

The expansion of consumers' income. New consumers' income which results directly from new investment (in excess of saving) is spent in turn on consumers' goods or is saved; and so long as the new money continues to pass regularly by spending and investment from income receiver through the hands of businessmen and back into income again, the increased level of incomes will be maintained indefinitely.

The results of the first impact upon incomes of the new money investment will be greater than will be the later and final results. The reason for this lies in the fact that wage earners previously unemployed and now receiving new money incomes will expand their expenditures without proportionately expanding their cash balances. It has been calculated that the "period of circulation" of new wage payments from income to income again may be about two months.⁵ Obviously, if new money at first becomes new income six times per year, the expansion of annual income is much greater than it will be later, for with the passing of time a larger part of the new money income flows into the hands of business and professional groups, or the price level rises. In either event, the velocity of spending the *new* money will slow down to the average level. Once it has reached its normal velocity, the new money will join the rest of the money supply in reappearing as net income at the appropriate intervals determined by the circuit or income velocity of money. This increased level of income should remain indefinitely until disturbed by some other factor. The increased level of income which results from the expansion in new investment is the result of the operation of the "Multiplier" in what we may call Phase I.

The multiplying effect of a shrinkage in new investment. The Multiplier works in both directions. An expanded rate of investment leads to increased money incomes; a shrinkage which reduces investment below current saving leads to a shrinkage in annual money incomes amounting to some multiple of the deficiency of new investment. Further, since such a decline in the volume of new investment is generally accompanied by a worsening of business prospects, the multiple shrinkage in incomes is unlikely to be offset by any material shrinkage of cash balances or increase in the velocity of money.

The size of the Multiplier: Phase I. It follows from the preceding discussion that employment and money incomes must expand to a level at which the new money that was spent on new

⁵ Clark, J. M., *The Economics of Planning Public Works*, Washington, D. C., 1936, pp. 87-88.

investment is absorbed into the cash balances of the general public—that is, until the *total* cash, both old and new, bears an acceptable relation to the total income of the community.⁶

Three basic factors may be said to influence the size of the Multiplier. The first is the behavior of the income receivers who first benefit from the new spending arising from the expansion in investment. To the extent that the increased incomes go mainly to workers, who will be likely to spend their new incomes with considerable rapidity, one may expect the multiplying effect to be substantial and rapid. Indeed, if the expansion in incomes, both initial and subsequent, were to go only into the hands of the low-income groups, the rise in the level of employment and income would be much larger than it can become in actual fact. But the new money income must flow through the business community as a whole, and sooner or later it becomes a part of the general money supply.

The second basic factor influencing the size of the Multiplier is the income or circuit velocity of money. When the new money has become generally distributed in the economic community, it settles down into cash balances with a velocity similar to that of the total money supply. When this occurs, the multiplying effect of the new money subsides. Thereafter the new level of annual income should exceed the old by an amount equal to the volume of new money multiplied by the income velocity of money. In this case, the multiplier for a given year would be the income velocity. But, as we have already seen, income velocity is subject to cyclical variations. The third factor is the "leakages." Were it not for these, this new and improved level of income should continue indefinitely so long as no outside circumstances appear to alter the income velocity of money.

The effects of "leakages" on the size of the Multiplier. We now need to examine the factors which operate to reduce the multiplying effect of new investment on income. These factors are commonly lumped together under the highly descriptive title of "leakages." One type of leakage is that involved in the absorption of the new money into the general money supply. During this process, as we have already seen, the frequency of exchange of such money declines and the power of the new money to create new income during a given period is reduced.

⁶ Cf. Keynes' *General Theory of Employment*, New York, Harcourt, Brace & Co., p. 83, where he says, "Yet employment, incomes and prices cannot help moving in such a way that in the new situation someone does choose to hold the additional money." Also cf. Alvin Hansen's *Full Recovery or Stagnation*, New York, W. W. Norton & Co., 1938, p. 122, for the same view.

A second form of leakage, like the first, arises from a slowing down of the velocity of new money. Instead of spending all of the new money income derived from the expansion in new investment, income receivers may increase the size of their cash hoards. Part of the new money thus accumulates as idle balances and no longer is spent to increase the money incomes of others. There may be several causes for this type of leakage. If business is depressed and investment opportunities are poor, any current savings of income receivers may become mere additions to idle cash balances. Moreover, businessmen may refrain from filling the gaps in their stocks of merchandise resulting from sales, but may instead decide to hold an increased supply of idle money. Under these circumstances, the new money which results from the expansion in investment may leak away rapidly. The extent of such leakage will be large if business prospects are bad; it will be small if business is good.

A third type of leakage occurs whenever the receivers of new income use part of it to repay debts. If the creditors receiving repayments are banks, the debt retirement results in the reduction of the quantity of money by that amount. If debts are repaid to creditors other than banks, the money is piled up in idle cash balances. In either case, the new money is effectively removed from the channels of trade, and only an expansion of new investment will restore it to circulation.

To resort to the terminology used by Mr. Keynes in his *Treatise*, the second and third types of leakages are due to the failure of new investment to keep up with current saving. For when investment lags behind saving, the previous expansion of investment over saving is nullified, and incomes fall away again. The amount of leakage from this source is highly uncertain. It is likely to be higher in the earlier stages of depression than in the later stages, while in times of reasonable prosperity it may be nonexistent.

Yet another form of leakage occurs when the expansion in new income stimulates imports from abroad and causes a net outflow of funds. Nor can any reliance be placed on the possibility that the loss of funds to foreign countries may later be restored by an expansion of exports.

The relation of the Multiplier to the price level. One must now inquire into the relation between the Multiplier and the price level. The multiplying effect of new money spent in expanded investment operates through an expansion in money incomes. When these increased money incomes are spent for con-

sumption goods, there may arise two different results. There will be some tendency for commodity prices to rise; but so long as there exists plenty of unused capacity, the expansion in the volume of production will be more noticeable than the rise in prices. If the new volume of money is absorbed into the monetary circulation before the full capacity of industrial production is reached, prices will show little tendency to rise save in those industries where output expansion is difficult. However, when the volume of new investment in excess of money saving continues beyond the point where the capacity of industry is generally utilized, the effect on prices will become vitally important. It is this situation which characterizes the commodity price boom.

The significance of the Multiplier: Phase I. The most difficult problem of monetary theory is to discover the causal relations among money, business activity, and the price level during the short-run periods constituting the business cycle. We have previously considered the usefulness of Keynes' approach, which utilizes the discrepancy between saving and investment to show the impact of forces leading to changes in output and prices. The concept of the Multiplier may be thought of as a device for explaining not only the *direction* of changes in output and prices but their *magnitude* as well.

The Multiplier applied to public works. Public interest in the Multiplier concept has been stimulated by the proposals and the attempts to stimulate recovery and employment during the depression of 1929-1939 by resorting to public works. The effectiveness of public works as a means of expanding income depends on several factors. In order that public works shall have any beneficial effect upon income, it is necessary that the money used for financing them shall constitute a net increase over what would have been spent had the public works not been undertaken. The government, therefore, must obtain funds (1) by borrowing new money from banks, (2) by borrowing savings which otherwise would have been hoarded, or (3) by taxing individuals who otherwise would have neither spent nor invested all of their income. Only in this way can any increase in income be expected. Further, the multiplying effect of new spending depends upon the magnitude of the leakages which appear. Finally, success in the use of public works as a means of promoting a genuine business recovery depends upon the degree to which the public works so improve business prospects that an expansion in private investment is stimulated.

Because of the interest in public works as a means of promoting recovery from depression, calculations as to the increases in income which might result from a given quantity of new investment have generally been made in terms of the immediate future. In such calculations the leakages have been given great weight in the form of assumptions as to the fraction of the public's total income to be spent on consumption goods. Thus, if it be assumed that income receivers spend but one-half of their incomes and hoard the rest, the new incomes which would be created by a new dollar spent on public works would be $\$1.00 + \$0.50 + \$0.25 + \$0.125 + \$0.0625 + \$0.03125 + \dots$, or a total of $\$2.00$. If it be assumed that income receivers spend $\frac{2}{3}$ of their incomes, the total new income resulting from spending of a new dollar would be $\$1.00 + \$0.66\frac{2}{3} + \$0.44\frac{4}{9} + \dots$, or a total of $\$3.00$. Similarly, if income receivers spend $\frac{3}{4}$ of their incomes, the total additions to incomes from the spending of a new dollar would be $\$4.00$. It may be assumed, as we explained earlier, that new spendings of money may have a fairly active turnover, moving from income receiver to income receiver in the course of, let us say, two months. Under these assumptions, it is clear that the main effect on income would be achieved within the course of the first year. This approach disregards the multiplying effect of the new money after it has settled down and become subject to the general income velocity.

The Multiplier: Phase II

Keynes' use of the Multiplier involves two separate and distinct concepts. The first of these we have already examined under the title "Phase I." The essential question involved in Phase I is what quantity of added income may be expected as a result of a given volume or increment of new investment involving new spending of money. The answer to this question is found in the income velocity of the *new money*. Allowing for leakages, the expansion in the level of annual income should equal the product of the new money spent on investment and its income velocity. The leakages comprise any sidetracking of the new money into idle hoards, debt repayments, or export, with the result that it no longer moves in the cycle from income receiver to income receiver leaving in its wake a trail of expanding incomes. It is clear that leakages in this sense vary widely with changing conditions and, therefore, are difficult to measure.

But Keynes' use of the Multiplier concept is broader than what we have discussed under the title Phase I. This is clearly

indicated by his absorption in the idea (developed in his *General Theory of Employment*) that saving and investment must be equal, and by the pains with which he examines the question of the reasons for saving. Neither the idea of equality of saving and investment, nor his analysis of saving is essential for an explanation of Phase I of the Multiplier.⁷ Yet Keynes uses these concepts to develop the theory that fluctuations in business activity result from the operation of the forces tending to make saving and investment equal. Because of the importance which Keynes places upon the causes of saving, it is worth our while to digress for a moment to examine his explanation of saving.

Factors determining the volume of savings: The propensity to consume. Since that part of one's income which is not spent on consumers' goods is saved, the explanation of saving requires an examination of the behavior of consumption. Keynes uses the term "propensity to consume" to indicate the ratio of a person's consumption to a given income. He holds first, that the "propensity to consume" is fairly stable. Therefore, although different individuals receiving given incomes will spend on consumption different proportions of their incomes, on the whole for any given level of money incomes, the proportion of total income which will be spent on consumption tends to be stable. It follows that the total volume of saving which results from a given level of income is likewise stable and but little affected by changes in the rate of interest.⁸

Because man's habitual standards of living constitute a first claim upon his income, short-run increases in income are likely to be utilized to expand savings, provided that the previous income was sufficient to satisfy the habitual standards. Likewise, a decline in income will most likely cause a greater shrinkage in savings than in consumption. Keynes holds it to be a fundamental psychological principle that, when income increases, consumption increases by a somewhat smaller amount.⁹ Therefore, the propensity to consume—the ratio of consumption to income—tends to decline somewhat with increases in income. Keynes concludes that during any given interval of time the volume of saving varies directly with the volume of income. Moreover, the changes in the volume of savings will be more than proportional to the changes in income.

⁷ Instead, the explanation of Phase I requires the use of an analysis similar to his "incentives to liquidity" developed in Chapter XV of his *General Theory of Employment*.

⁸ *General Theory of Employment*, pp. 93-94 and 95.

⁹ *Ibid.*, pp. 96-98.

The Multiplier: Phase II. When speaking of the Multiplier, Keynes in some instances refers to the effect of an *increment* of aggregate investment.¹⁰ In other instances he refers to the relation of employment and income to the *rate* of investment.¹¹ When his exposition is designed to show the effects of a given *increment* of investment, the analysis takes the form which we considered in Phase I. When the analysis is concerned with the *rate* of investment, we shall call it the "Multiplier, Phase II." Here Keynes' concept of the propensity to consume is used to explain the *flow* of new income and employment resulting from a *flow* of new investment.

Let us assume that the marginal efficiency of capital increases, relative to the rate of interest, so that businessmen desire to expand the rate of investment. Further, let us assume that the previously existing rate of investment was one which just equalled the current flow of funds seeking investment and voluntarily furnished by savers. Under these circumstances the increased *rate* of investment can be financed only by an expansion in the flow of money (*MV*). Each *increment* of investment in excess of the previously prevailing rate of investment, with its accompanying increase in the quantity of money, will cause the expansion in employment and income with which we became familiar in our discussion of Phase I of the Multiplier. At the beginning we assumed that businessmen now wish to maintain a new *rate* of investment above the previous level and greater than that which the current rate of voluntary savings will sustain. So long as this condition continues, businessmen can maintain the new high rate of investment only by obtaining from the banks (or from idle hoards) an ever expanding volume of money. Each increment or batch of new money spent for new investment will cause an increase in employment and income as indicated in Phase I of the Multiplier. The public is therefore enjoying a constantly expanding income out of which it is able to set aside a larger and larger amount as voluntary savings available for investment. This increase in available savings takes place (1) because of the stability of the public's "propensity to consume" and (2) because the expansion in investment and employment increases the relative share in the total income received by the business class, which tends to save a larger fraction of its income than do other income receivers.

¹⁰ *General Theory of Employment*, pp. 115 and 248.

¹¹ *Ibid.*, pp. 113, 248, 252, and 281.

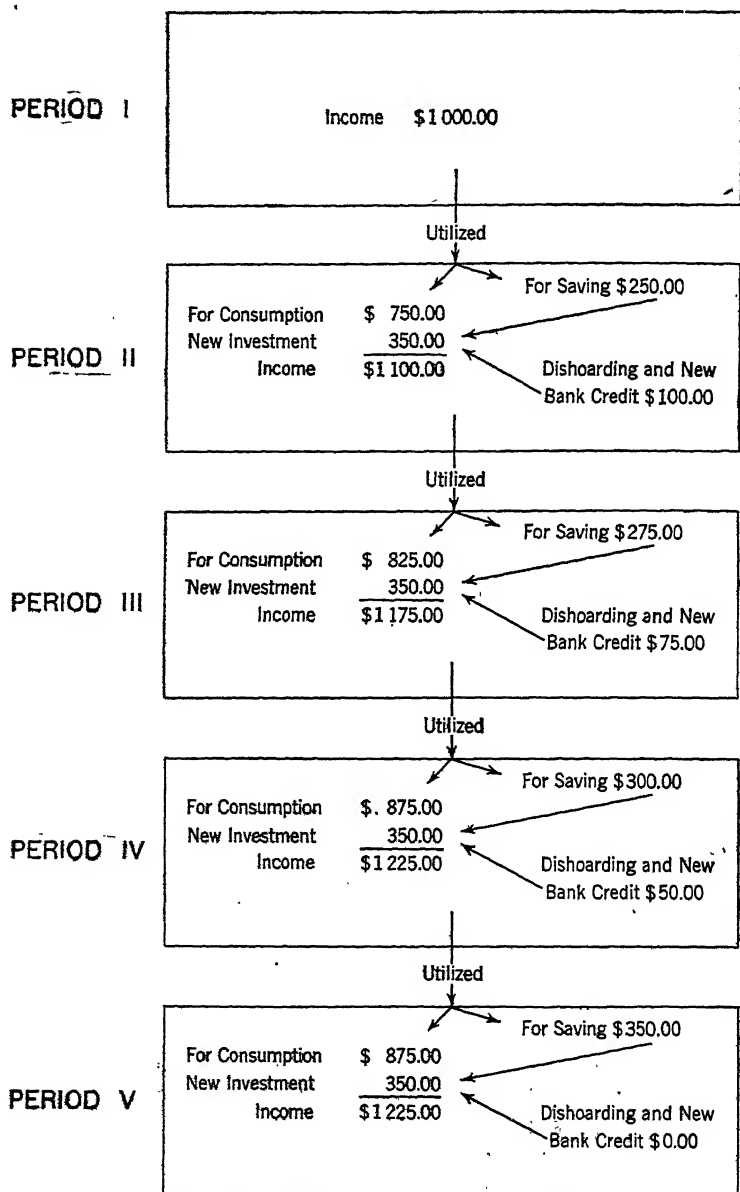


CHART 25. THE MULTIPLIER—PHASE II: RATE OF INVESTMENT ABOVE THE RATE OF SAVING.

It follows, therefore, that as the increased *rate* of new investment is maintained, an ever larger fraction of the funds required to finance any given increment of new investment can be ob-

tained out of money savings, while an ever smaller amount of additional money (MV) will be required. As the expansion in income and savings continues, the new high rate of investment requires smaller and smaller quantities of new money, so that the multiplying effect on income (Phase I) arising from the new rate of investment becomes smaller and smaller. Eventually, incomes must rise to the point where the increased *rate* of voluntary money savings will equal the increased *rate* of investment, and the Multiplier, Phase II, will have reached its limit. From that time on, the increased rate of investment assumed at the beginning of our illustration, though continued indefinitely, will add nothing to the scale of employment and incomes.

To summarize, each increment of new investment (in excess of available money savings) accomplished by an appropriate expansion in the quantity of money puts into operation Phase I of the Multiplier with a resulting appropriate increase in employment and incomes. But as incomes increase, money savings also increase, so that smaller and smaller increases in the quantity of money are needed to maintain the new rate of investment. When incomes reach the point where the rate of saving equals the rate of investment, expansion ceases. It may help to understand Phase II of the Multiplier to examine Chart 25, based upon the period analysis with which we became familiar in the preceding chapter. It can be seen that the increased income of each succeeding period permits money saving to expand so that in each succeeding period less new money is required to maintain the given rate of investment.

The Multiplier when saving exceeds investment. Just as the principle of the Multiplier operates to increase employment and incomes to the point where saving equals investment whenever money investment tends to outrun voluntary saving, the reverse is true when voluntary saving tends to exceed investment. To illustrate this, let us suppose that a previously existing equilibrium in which saving and investment are equal is disturbed by an increase in the interest rate which reduces the rate of investment. Since saving will not be reduced, saving will exceed investment, and the Multiplier will operate to bring a reduced level of employment and income.

The immediate result of an excess of saving over investment is some piling up of cash balances in the hands of savers. Because of the shrinkage in investment, the flow of saved funds into consumers' income is interrupted. This in turn leads to a reduction of expenditures for consumers' goods, an accumulation

of unused stocks of merchandise, the lowering of prices, output, and profits. If businessmen (and others) were willing promptly to reduce the size of their cash balances as idle savings were accumulated, it might serve to offset the effect of the excess of saving. But nothing in the situation is likely to induce them to do this. The result of an excess of money saving over investment, therefore, must be a decline in incomes and employment. Each businessman who attempts to minimize his losses by reducing output causes a further shrinkage in incomes. When a decline in the rate of investment leaves a quantity of idle, uninvested savings, the level of employment must fall to the point where the reduced cash balances (exclusive of the hoarded savings) bear an appropriate and acceptable relation to the community's income and expenditure. Thus, the Multiplier, Phase I, operates to reduce employment, incomes, and prices whenever saving exceeds investment.

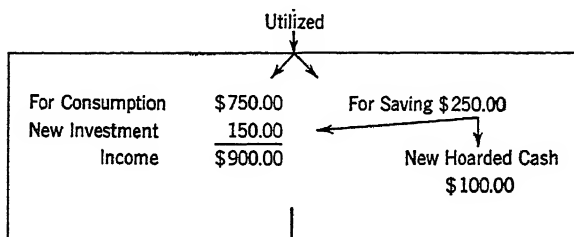
Even after the level of employment and income shrinks to the point where the reduced, nonhoarded cash balances again are normal and acceptable in relation to income, the level of incomes may still remain high enough to induce a rate of saving which exceeds the new lowered rate of investment. Therefore, the sequence of an excess of saving and falling employment which characterizes Phase I of the Multiplier continues as long as new quantities of hoarded cash savings accumulate. Only when the level of employment and income falls to the point where the rate of saving just equals the level of investment will a new equilibrium position be reached. This is the result of the Multiplier, Phase II, which operates to adjust the level of income so that saving and investment are equal. This is illustrated in Chart 26, in which it may be seen that shrinkage in income gradually causes money saving to decline to the point where it just equals the reduced rate of investment.

The acceleration principle. In the foregoing illustrations of the operations of the Multiplier, it was assumed that the disturbance to a state of equilibrium in which saving and investment were equal arose out of either a change in the rate of interest or a change in the marginal efficiency of capital. It was assumed that when a disturbance in either of these two important factors occurred, the Multiplier operated to restore equilibrium. But the situation is more complex than this. If, for example, a decline in the rate of interest leads to an increased rate of new investment and an expansion in incomes and business activity, there is almost certain to follow some improvement in profit expectations. There

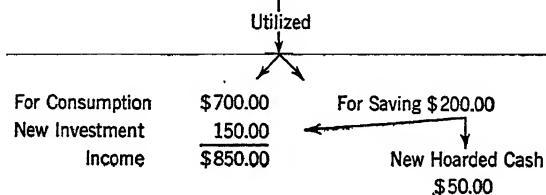
PERIOD I

Income \$1000.00

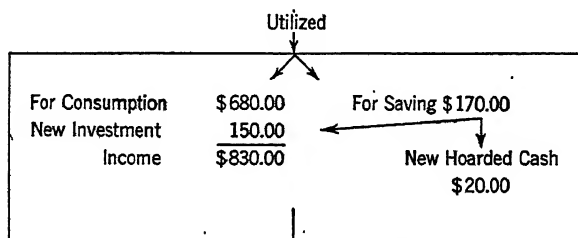
PERIOD II



PERIOD



PERIOD IV



PERIOD V

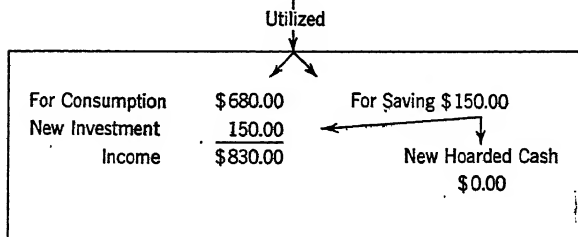


CHART 26. THE MULTIPLIER—PHASE II: RATE OF SAVING ABOVE THE RATE OF INVESTMENT.

appears, therefore, a new and cumulative incentive to expand investment. The new employment which arises from the operation of the Multiplier upon this additional investment merges

into the original increase. This cumulative expansion in investment and employment is sometimes described as the principle of "acceleration." It is obvious that the acceleration principle operates in the opposite direction to reduce investment and incomes once a decline in investment below saving appears and a fall in output, incomes, and prices gets under way.

CHAPTER XXXV

THE RATE OF INTEREST AND THE PRICE LEVEL

BECAUSE of the manner in which modern monetary systems are set up, with bank credit comprising the main part of the supply of effective money, it is inevitable that the rate of interest should occupy a strategic place in monetary theory. In the quantity theory approach, changes in the discount rate provide the means of converting a change in the supply of standard money into a corresponding change in the quantity of bank credit. In the income approach, it is the interest rate that is the determinant of the cost of expanding industrial output and incomes. In almost all plans for exercising monetary control, the discount rate plays an important part.

It would be presumptuous in the limited space which can be taken here to pretend to analyze with any completeness or with any high degree of exactness the factors which determine the rate of interest. The explanation of the long-term interest rate has properly been the subject of long and careful study in the field of general economic theory. It is appropriate here merely to mention the more generally accepted explanations arrived at by the economic theorists and to examine the more strictly monetary aspects of the interest rate.

The Equilibrium Rate of Interest

Under any given circumstances, there is some rate of interest at which all money savings will be demanded for investment. Such a rate of interest which equalizes money saving and investment is known as the "equilibrium" or "natural" rate. It is convenient to differentiate between an equilibrium rate of interest which tends to equalize the rate of saving and investment in the long run, that is, the rate which tends to keep the level of saving and investment equalized over a long period, and the short-run equilibrium rate which equalizes money saving and investment during different stages of the business cycle.

The long-run equilibrium rate. The long-run equilibrium rate of interest tends to be relatively stable. Like any other price, it is determined by the forces of supply and demand. The supply of capital available for investment in the long run is the result of voluntary saving by income receivers who, for various motives, choose to refrain from spending on consumption all of their current income. At some point the saving of added amounts becomes irksome, and, to overcome this irksomeness of saving the marginal units of capital, some reward must be offered. This necessary reward is the "supply price" of capital, for without it the supply of savings needed to satisfy the demand would not be forthcoming. Because of the greater irksomeness of saving increased amounts, greater rewards, in the form of higher interest rates, are required to obtain an increased volume of current savings under given conditions.

The demand for capital rests primarily with the businessmen who anticipate that new investment in capital can be made to yield a net return.¹ Because of the operation of the law of diminishing productivity, added amounts of capital used by businessmen will have smaller and smaller marginal products, other things remaining equal. Beyond a certain point, therefore, businessmen will expand their use of capital only when they can get it at lower rates of interest. That rate of interest which equalizes the long-run rate of saving and investment is the long-run equilibrium rate.

The short-run equilibrium interest rate. The short-run equilibrium rate of interest is one that will bring into equality the short-run or current money savings and current investment. In contrast to the relative stability of the long-run equilibrium rate of interest, the short-run equilibrium rate tends to be highly unstable.² The instability in the short-run or cyclical equilibrium rate of interest arises not so much from fluctuations in the volume of saving, which Keynes properly points out as respond-

¹ This statement disregards the place of consumer borrowing that must be added to business borrowing to make up the total demand for savings. In times of war, the borrowings of the government may quite overshadow the capital demands of business.

² It is well to remember that our discussion of long-run and short-run equilibrium rates of interest does not refer to the difference between the interest rate on long-term and short-term loans. The loan market, at any given time, contains a number of different subdivisions within which fall loans of different maturities. These loans are arranged according to the requirements of borrowers and lenders. The rate of interest generally is lower for short- than for long-maturing loans because of their liquidity to the lender and their inferior advantages to the borrowers.

ing primarily to changes in the level of money incomes, as from changes in the willingness of entrepreneurs to invest in capital goods. The changes in profit expectations which occur in the different stages of the business cycle, therefore, may properly be credited with the responsibility for the instability of the short-run equilibrium interest rate.

Whenever the actual or market rate of interest diverges from the equilibrium rate, disturbances appear in the economic structure. When the market rate is below the equilibrium rate, investment expands beyond current money savings, and money incomes, prices, and output tend to rise. Whenever the market rate is above the equilibrium rate of interest, investment falls below saving, and money incomes, prices, and output fall. The explanation of cyclical movements in business activity, therefore, would seem to demand an inquiry into why the market rate and the short-run equilibrium rate of interest fail to coincide. We have already suggested that the short-run equilibrium rate is highly unstable during the different stages of the business cycle. It is enough for our purpose to recognize this instability without attempting to probe deeply into the nonmonetary causes that lie behind it. The general causes behind cyclical fluctuations in business expectations are the subject of specialized study in business-cycle literature and are beyond the scope of a study of monetary theory. It is desirable, however, to inquire into the forces that determine the market rate of interest and the reasons why it fails to equal the equilibrium rate.

The Market Rate of Interest

Before examining the general principles behind the determination of the market rate of interest, it is well for us to remember that in reality there are a multitude of market rates, each applicable to loans of a different degree of risk and of a different maturity. These rates are maintained in an appropriate although by no means a fixed relation to each other in the light of existing borrowers and lenders. If short-term rates become too high in comparison to long-term rates, some individuals will borrow at long term and lend short. The opposite will occur if short-term rates become too low. This will be discussed further on page 550 following. What we say about the market rate of interest, therefore, applies to the general behavior of these separate, individual rates.

The market demand for investment funds. Under any given set of circumstances, the demand for investment funds may be

represented by the conventional demand curves shown in Chart 27. The demand for funds by entrepreneurs reflects the demand for capital goods. Because capital responds to the law of diminishing returns or diminishing productivity, larger amounts will be put to use, other things being equal, only at lower rates of interest. The absolute amounts of capital which entrepreneurs will require at any given schedule of interest rates depends upon the expectations of general productivity of new capital to its owners. Thus, when new inventions, new supplies of nat-

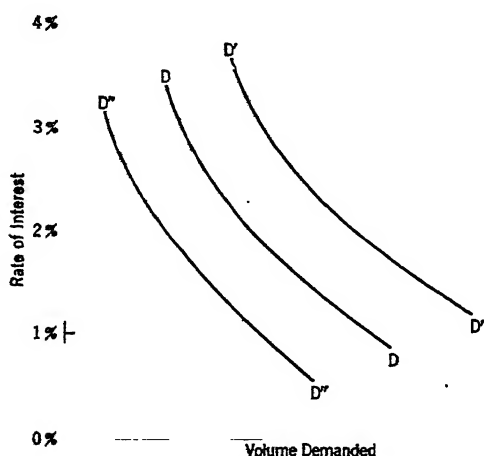


CHART 27. THE DEMAND FOR INVESTMENT FUNDS.

ural resources, or a growing population characterizes the period, the general level of productivity of capital increases and is indicated on the chart by moving the demand curve to the right. Thus, $D'D'$ indicates an increase in the attractiveness of new investment. But of vastly greater importance in explaining the cyclical changes in the location of the demand curve is the fluctuation in profit expectations. During the upswing of business, profit expectations from new investment are high, and the demand curve for capital moves sharply to the right. During the downswing, expectations of profits from new investment fall sharply, and the demand curve moves to the left ($D''D''$). Contributing heavily to these changes in the location of the demand curve for investment funds are, of course, changing levels of prices. Regardless of the originating cause of changes in profit expectations, once the cyclical movement begins, accompanying changes in prices accentuate the change in profit expectations

and cause the movement to become cumulatively greater. The forces operating to cause violent and sudden changes in the demand for capital are the same ones that are responsible for changes in the equilibrium rate.

The market supply of investment funds. The amount of funds offered for investment during any given period is not a fixed amount but varies with the rate of interest. The supply curve of investment funds, therefore, resembles any other supply curve in that it slopes upward and to the right, as is shown in Chart 28.

The primary source of investment funds is the money savings of income receivers. These funds, however, are not necessarily offered for investment regardless of the interest rate. On the contrary, a low rate of interest will reduce the willingness of savers to lend or invest their funds. Like any person having an existing supply of something that may be offered or withheld, the savers of money have their "reservation prices." If the rate of interest is high, they are encouraged to lend or invest a larger volume of their savings than if the interest rate were low. Three separate reasons help to explain why savers may refrain from lending or investing their funds at low rates of interest. First, any lending or investing of funds involves a certain amount of cost and trouble. Unless the promised or expected rate of return is in excess of the cost of making and administering the investment, savers are better off if they simply hoard their savings in cash and avoid investment altogether. Second, in most private investment there is some degree of risk of loss of income or principal. Unless, therefore, the expected returns over the cost of making and administering the loans are sufficient to compensate for the risk, savers will prefer to hoard rather than to invest their cash savings. Finally, there is the question of the future interest rate. Even though the ruling interest rate is high enough to cover risk and cost of administration, savers will still refrain from long-term investment if they believe that the interest rate is likely to rise in the near future. The reason for this is not hard to see. Whenever the saver believes that the cost of waiting (that is, of going without the interest that could be earned by lending at the current rate) is less than the gain to be derived from the increased interest rate, he will prefer to hold his money idle until interest rates rise. The strength of this motive for postponing investment will depend upon (a) the difference between the current and the expected interest rate, and (b) the length of time before the increased rate of interest

is expected to become a reality. Thus, if the expected rise is small, or if the interval of waiting is expected to be long, the motive to postpone lending is small.³ This tendency of savers to hold out for higher rates of interest partially explains the positive slope of the supply curve of loanable funds.

In our present economic society, equipped with a modern and flexible banking system, the sources of new loanable funds is not limited to those saved by income receivers. Within the limits set by their available reserves, banks can expand their loans and investments by creating demand deposits. The banks

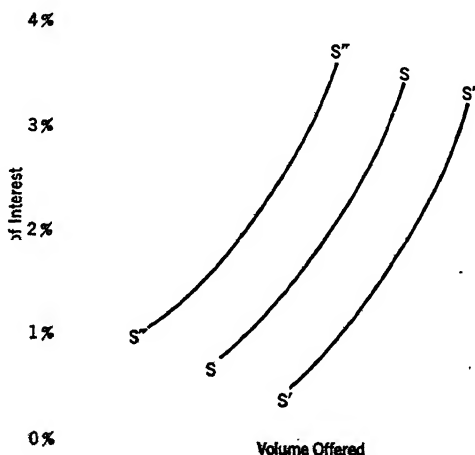


CHART 28. THE SUPPLY OF INVESTMENT FUNDS.

are actuated by motives which closely resemble those of individual saver-lenders. First, unless the rate of interest is high enough to cover the administration costs and risk, they will not expand their loans and deposits. Second, although not particularly influenced by the expectation of higher interest rates in making short-term loans, banks cannot be oblivious to the dangers of loss on bond investments that result from rising interest rates. This risk of loss on long-term investments explains why an increase in the volume of bank reserves sometimes results in very low rates of interest on short-term loans while leaving the market rate on long-term loans but little affected.

The general shape of the supply curve for loanable funds is

³ This is what Keynes calls the "speculative motive" for holding cash. Cf. his *General Theory of Employment*, New York, Harcourt, Brace & Co., 1936, pp. 170-171.

influenced by risk factors, administrative costs, and the prospective interest rate. The location of the supply curve is determined by the supply of loanable funds made available by savers (current and past) and the banking system. Referring to Chart 28, if rising incomes lead to increased saving, the supply curve moves to the right ($S'S'$). Falling incomes, on the other hand, lead to reduced savings and cause the supply curve to move to the left ($S''S''$). A rise in bank reserves, increasing the ability of banks to expand loans and investments, helps to move the supply curve to the right, while a shrinkage in reserves has the opposite result. Hence, the import of gold, the purchase of bonds by the central bank, or a reduction in the central bank rediscount rate that cheapens the cost to banks of expanding reserves tends to move the supply curve of loanable funds to the right. An export of gold, the sale of securities by the central bank, or a rise in the central bank rediscount rate tends to reduce the ability and willingness to lend and hence causes the supply curve to move to the left.

The market rate of interest. Following the familiar supply and demand analysis, it appears that the market rate of interest

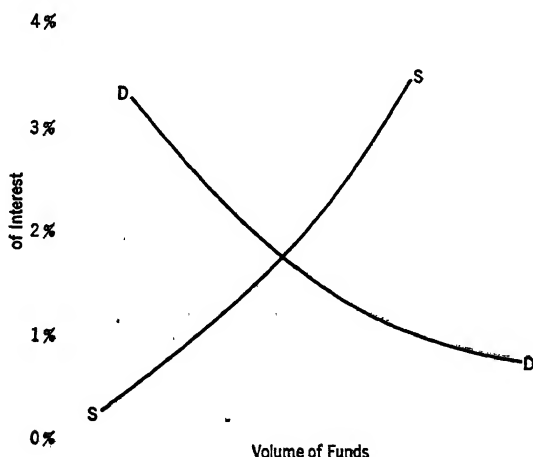


CHART 29. THE DETERMINATION OF THE MARKET RATE OF INTEREST.

for any given type of loan is fixed at the point of intersection of the supply and demand curves as shown in Chart 29. If the demand for loanable funds is small, owing to a worsening of business prospects, the intersection of the supply and demand curves will be at a low rate of interest. But at this rate some

savers may prefer to hoard their cash savings. Reduced demand for short-term loans and the danger of loss on bond investments may prevent banks from expanding their loans to counteract the hoarding of savers. Savings thus accumulate as idle hoards because of the impossibility, under the circumstances, of bringing the market rate of interest down to the level where all money savings will be taken for investment. Attempts to lower the market rate usually take the form of enlarging the volume of bank reserves by appropriate central bank or other monetary policy. Such action may succeed in encouraging an expansion of money investment (and thus in offsetting the hoarding practiced by savers) through the encouragement of short-term investment in current capital goods by businessmen on the basis of commercial bank loans, and through the purchase of bonds by banks. But when the demand for new capital is very much reduced (for example, the equilibrium rate of interest may fall to zero in times of acute depression), it becomes impossible to force the market rate down to the equilibrium rate.

On the other hand, when business prospects improve, the demand curve for loanable funds is shifted to the right. In such a case, the equilibrium rate of interest, which would balance money savings against investment in capital goods, tends to rise. Although the market rate, in such a case, may rise sufficiently to call into use all of the current money savings, it is not likely to rise to the point where such savings satisfy the demand for funds. The rising rate of interest will result in the appearance of new funds in the investment market. First, the improved market rate of interest will call out of hoarding the idle cash representing old savings which were not invested. Furthermore, if the banking system is well supplied with excess reserves, it will respond readily to the increased demand by expanding its loans and its deposits. The willingness of banks to lend at rates below the equilibrium rate further stimulates investment both in short-term form through commercial loans and in long-term form through the expansion of bank loans to speculators and others purchasing securities.

Deviation of the market rate from the natural rate: corrections. Economic analysis of the equilibrium type proceeds on the assumption that disturbances to equilibrium set into operation automatic corrective forces. Can this same assumption be applied to a situation in which the market rate of interest has departed from the equilibrium or natural rate? Let us suppose that, because of an increased quantity of money, the market

rate of interest falls below the natural or equilibrium rate, new investment increases, bank credit expands, and prices rise. To restore balance, one of two things must happen: the market rate of interest may rise, or the equilibrium rate of interest may fall.

A decline in the equilibrium rate of interest requires either an expansion in the volume of saving or a decline in the earning capacity of new capital. But neither of these changes will result directly from the lowered market rate of interest. On the contrary, saving is discouraged, while wind-fall profits, which result from the expansion in investment and credit, tend to increase rather than decrease the desire to invest. Of special importance is the effect of rising prices on profits, which overshadows, for a time at least, the tendency toward diminishing productivity of the increased supply of capital. The equilibrium rate of interest, therefore, tends to become higher instead of lower, so that an early restoration of equality between the market and equilibrium rates can hardly be expected to occur because of a fall in the equilibrium rate.* Nevertheless, there will ultimately appear forces which do tend to lower the equilibrium rate of interest. First, the rate of saving will increase as incomes rise under the impact of the increased rate of investment. Second, the expanded rate of investment eventually bears fruit in the form of a constantly expanding capacity to produce finished goods, which in turn weakens the advance in prices. When this fact is coupled with the growing inefficiency and waste so common during boom periods, profit margins shrink and the advantages of new investment decline.

Other adjustments tending to equalize the market and the equilibrium rates of interest appear in the form of changes in the market rate. The expansion phase, assumed to have been brought about by a market rate of interest below the equilibrium rate, leads to a gradual exhaustion of the excess reserves of the banking system. More reserves are required to support the increased volume of deposits, and some drain of reserve cash into circulation occurs. If an international gold standard is in operation, an expansion in credit and a rise in domestic prices may cause an export of gold.

* Cf. Wicksell, Knut, *Interest and Prices*, London, Macmillan & Co., Ltd., 1936, pp. 93-101, where he holds that any permanent fall in the market rate of interest tends to cause an unlimited and continuous rise in prices. He holds that any restoration of equality between the market and the "natural" rates of interest probably must depend mainly upon a rise in the market rate. For a like view, also see his *Lectures on Political Economy*, London, G. Routledge & Sons, 1935, Vol. II, pp. 192-195.

During some periods of expansion, a shortage in bank reserves and a rise in the market rate of interest clearly operate to restore equality between the market and the equilibrium rates. On the other hand, some periods of prosperity are terminated more because of industrial dislocations causing a decline in profit prospects and therefore in the equilibrium rate of interest than because of tight money.

The preceding discussion has dealt with the effects of a market rate of interest that is below the equilibrium rate. Perhaps it is appropriate to call attention to the opposite effects that one may expect when the market rate is *higher* than the equilibrium rate. In such a case, saving outruns investment, and prices, incomes, and business activity decline. The worsening of profit prospects accentuates the difference between the market and the equilibrium rates so that the condition of business becomes cumulatively worse. If the market rate of interest can be reduced sharply by appropriate monetary policy, a correction may be achieved; for if the long-term market rate can be reduced below the equilibrium rate, the descending spiral of deflation will be broken. But in times of acute depression, capital may have a marginal product of zero or less. Then no recovery can be had without a rise in the equilibrium rate. However, the using up of inventory stocks may have progressed to the point where new short-term investment again becomes necessary. Prices may cease falling; old capital becomes obsolescent and worn out while new forms of greater productivity appear; depression shrinks incomes to the point where the rate of saving is curtailed. Gradually, therefore, there emerge forces that operate to raise the equilibrium rate of interest. In the meantime, the market rate tends to decline as depression causes excess reserves to accumulate in the banking system.

The equilibrium rate and economic equilibrium. The original use of the term *natural rate* of interest implied not only that it resulted in an equality between saving and investment but also that it represented an equilibrium rate providing the best possible conditions in the economic world. So long as the market rate was maintained equal to the natural rate, prices would presumably be stable, fluctuations in business activity would be avoided, and there would exist full employment of the factors of production. Furthermore, the term *natural rate* gives the impression of fixity and stability.

As we saw in the preceding analysis, the short-run natural or equilibrium rate is highly unstable because it fluctuates with

business expectations. It is high during periods of prosperity and low during depressions. It is affected by the changes in the level of incomes which accompany prosperity and depression. Therefore, such an equilibrium rate, which establishes an equality between saving and investment under any given circumstances of income and business expectations, can by no means be said to be in the basic sense an equilibrium rate around which the market rate fluctuates and to which it constantly tends to return.⁵ Moreover, the idea that an equality between the market and the natural rates of interest would not only abolish fluctuations in business but also would provide full employment is open to criticism. A rate of interest that equalizes current saving and investment merely stabilizes business activity at its existing level. If the level of activity is one of less than full employment of the factors of production, the equilibrium rate would merely perpetuate it.

But if the short-run equilibrium rate is merely one that would perpetuate the existing level of money incomes, cannot more be said for the long-run equilibrium rate? Such a rate, if achieved, would over a long period of time bring savings and investment into equality. In such a case, would not cyclical fluctuations then be but deviations from the normal trend of full employment? Mr. Keynes suggests that such need not be in fact the case.⁶ For example, modern economic society when fully employed might find itself saving a larger fraction of its money income than can find outlet in capital investment at acceptable rates of interest. "Economic maturity," in the form of disappearing frontiers of natural resources, and stable population may limit the investment opportunities at home while economic nationalism and war may prevent sizable outlets abroad. In such a case, the excess of money savings over investment will force down incomes, prices, output, and employment until money savings just equal money investment. Equilibrium, therefore, is achieved at a low level of employment, and chronic stagnation becomes unavoidable without government spending to bolster new investment. The long-run equilibrium rate of interest that promises to promote full employment, therefore, is one that will

⁵ D. H. Robertson refers to the natural rate at any given time as a *quasi-equilibrium* rate. For an illuminating discussion of the relation between the market and the natural rates, see his "Industrial Fluctuation and the Natural Rate of Interest," *Economic Journal*, December, 1934, reprinted in his *Essays in Monetary Theory*; London, P. S. King & Son, Ltd., 1940.

⁶ Cf. his *General Theory of Employment*, pages 307-309.

cause to be invested all of the money savings that appear under conditions of *full* employment. The avoidance of "secular stagnation" in modern society, dependent solely upon private investment, requires a long-run market rate of interest equal to this long-run equilibrium rate.

The Relation of the Discount Rate to the Price Level

In the preceding section we examined the relation between changes in the long-term interest rate and the price level. Whenever the long-term market rate differs from the equilibrium rate, changes occur in the level of investment, business activity, and prices. But it is insufficient to establish an explanation of business and price changes in terms of the long-term interest rate alone. Monetary changes have a direct influence only upon the rate of interest charged by banks. This means that it must be largely through changes in the short-term interest rate that changes in the quantity of standard money can influence the level of business activity and prices.

The necessity for a satisfactory explanation of the effect of the short-term loan rate, or discount rate, upon business activity may be clearly seen in connection with two common monetary problems. For instance, to explain the operation of the international gold standard, it is necessary to show that gold movements put in motion forces that shortly lead to such adjustments and corrections in the balance of payments as to check the flow of gold. If gold moves into a country because of a favorable balance of payments, prices and business activity must expand enough to increase imports and check the inflow of gold. But the direct effect of spending the proceeds of such gold imports may be small. Only when there is an expansion of bank credit upon this new gold will the normal effect upon prices be felt. Without some stimulating effect from a fall in the discount rate, this expansion of bank credit will not occur. Another example of the need for demonstrating a connection between the discount rate and the price level is found in attempts to stabilize business and prices through monetary and banking policy. Such policy operates by affecting the size of bank reserves, and this in turn influences the short-term loan rate of the banks.

Methods of approach. Two methods of approach may be used to attack the problem of the relation of the discount rate to business activity and prices. First, one may seek to discover reasons for believing that changes in the short-term interest rates will encourage or discourage investment. Bank loans of the

traditional, self-liquidating type are made to enable borrowers to expand their stocks of liquid capital goods. Therefore, changes in the discount rate may influence the volume of investment in such short-term capital. Second, the effect of the discount rate on investment and business activity may be traced through its influence on long-term interest rates.

The effect of changes in the discount rate on marginal business undertakings. Perhaps the explanation most commonly advanced is simply that changes in the discount rate change the willingness of businessmen to borrow funds for business purposes. A higher rate diminishes the advantages of borrowing while a lower rate makes borrowing more profitable. Because many business undertakings are marginal in nature, a change in rate will tip the balance in one direction or the other. The limitation of this form of explanation lies in the failure to designate which part of the economic structure responds to changes in the discount rate.

The influence of the discount rate on speculation. An attempt at greater realism takes the form of relating changes of the discount rate to speculation. A decrease in the discount rate encourages speculative borrowing while an increased rate discourages it. The sequence following an increase in the quantity of standard money might be said to be: (1) the decline in the rate on short-term loans, particularly in the central money markets, (2) a stimulation of the speculative markets, (3) the rise in prices of securities and the appearance of new issues, and (4) the rise in consumers' incomes as a result of an expansion in investment.⁷ Coupled with this may be an increase in commercial borrowing, if the temper of business is favorable to expansion. Moreover, unless absorbed readily by an expansion in speculative and commercial loans, excess reserves may induce the banks to purchase securities and thus increase their price. This development encourages new security issues and the expansion of investment.

On the other hand, a reduction in the size of bank reserves tends to cause a rise in the discount rates for speculative and commercial borrowing and thus reduces the profitableness of such borrowing. Moreover, the banks will exercise greater caution than before, refusing outright to make new loans involving

⁷ Cf. Edie, Lionel D., *Money, Bank Credit, and Prices*, New York, Harper & Bros., 1928, pp. 203-204. Also see Marshall, Alfred, "Evidence before the Gold and Silver Commission," *Official Papers*, London, Macmillan & Co., Ltd., pp. 48-49.

greater risks and pressing some borrowers for repayment. In this manner, changes in the lending standards of the banks supplement the effects of changes in the discount rate.

Does a rise in the discount rate restrain speculative and commercial borrowing? One may criticize the view that changes in the discount rate will influence sufficiently the volume of speculative and commercial borrowing to induce marked changes in business activity and the price level. For example, it is improbable that a reduction in short-term interest rates from, let us say, 5 per cent to 4 per cent would be of any great significance in determining whether or not the scale of operations of a business enterprise should be expanded. The interest on short-term loans can hardly constitute a very large part of the total production costs of the average industrial firm. If one assumes that the ratio of fixed to current capital of a firm is one to one, and that one-half of the current capital represents bank loans (a liberal estimate), only one-fourth of the total capital is exposed to the change in the discount rate. A decline in the rate from 5 per cent to 4 per cent reduces the cost of obtaining current capital by $\frac{1}{10}$ and the average cost of the total capital by only $\frac{1}{20}$. If this change in capital costs be averaged in with other operating costs, the net effect upon the manager's decision as to the desirability of expansion seems unlikely to be decisive.⁸ A similar question may be raised in respect to the assumption that a change in the rate of interest charged on stock market loans will lead to any marked expansion or contraction of such loans. A bullish market will respond favorably to a lower rate but is unlikely to feel much restraint from a modest increase. On the other hand, a bearish market will receive little stimulation from a lowered interest rate.

Of greater importance than changes in the discount rate may be the difference in treatment of the "fringe of unsatisfied borrowers," to use Keynes' expression. When reserves are plentiful, such borrowers receive more favorable attention as bankers adopt a more lenient attitude. When reserves are scarce, the "unsatisfied borrowers" become more numerous as bankers tighten their credit requirements. A considerable variation in the volume of bank credit may occur, therefore, regardless of the response of businessmen to the discount rate.

⁸ Cf. Ebersole, J. F., "The Influence of Interest Rates upon Entrepreneurial Decisions," summarized in the *American Economic Review*, March, 1938, Supplement, pp. 74-75.

Hawtrey's explanation of the operation of the discount rate. Hawtrey seeks to explain the effect of changes of the discount rate upon business activity and the price level by concentrating attention on the segment of the business community that he believes to be most exposed to changes in the cost of short-term borrowing. He concedes that manufacturers in general are relatively insensitive to changes in the discount rate. But this insensitivity does not extend to the wholesale dealer. In comparison with the value of the inventory of merchandise that he carries, the wholesaler's profit margin is small. Moreover, these stocks of goods are largely carried with borrowed funds. Because of the smallness of his profits in comparison with the volume of borrowed funds required to carry his inventory, the wholesaler's costs are vitally affected by changes in the short-term loan rate.

*The wholesaler requires a substantial inventory for convenience in meeting customers' requirements, but the size of this inventory is not rigid, and it may be varied somewhat with changes in the cost of carrying it. Some inconvenience may seem preferable to incurring higher costs. An increase in the short-term interest rate will reduce the profitability of carrying existing stocks and cause the middleman to postpone or reduce the scale of his purchases. A reduction in new orders by the middleman has an immediate effect upon the manufacturer's scale of output and his need for bank credit. The wholesaler, or middleman, can, without serious inconvenience, permit a considerable shrinkage in the size of his stocks. Hawtrey believes that a sharp increase in the discount rate may even overcome the effect of prospective profits growing out of rising prices. To profit from rising prices, merchants must hold goods longer than normal and are thus exposed to a certain increase in costs in order to obtain an uncertain, speculative gain.⁹ Hawtrey likewise believes that security dealers, buying and selling on a narrow and uncertain margin, are especially exposed in changes in short-term money rates.

To summarize Hawtrey's view, changes in the volume of money affect the size of bank reserves, which in turn causes changes in short-term interest rates. Wholesalers and other middlemen change the volume of their investment in merchandise in response to changes in the short-term interest rates. Changes in the volume of current purchases of merchandise by middlemen

⁹ Hawtrey's line of reasoning need not necessarily be limited to wholesale dealers and middlemen, but is applicable to any person who holds goods. Cf. Sayers, R. S., *Modern Banking*, London, Oxford University Press, 1938, p. 148.

cause changes in the volume of output of industrial firms. The result is a change in consumers' incomes and outlay and in the price level. Hawtrey by no means denies that changes in the long-term interest rate influence the volume of long-term investment and, through it, incomes and prices. But he is interested in showing how changes in the discount rate can affect the volume of business activity in a relatively short space of time.¹⁰

Keynes' explanation of the effect of the discount rate. Keynes' explanation of the effect of the discount rate on the price level is somewhat different from those which we have been examining. First, he holds that changes in the rate of interest charged by the banks on short-term loans induce corresponding though somewhat smaller changes in the long-term interest rate. Second, changes in the long-term interest rate mean a change in the rate of interest at which the income from durable goods and securities will be capitalized. Thus, an increase in the discount rate will cause a rise in long-term interest rates, which in turn causes a fall in the capitalized value of income-producing property.

The demand price of capital goods depends upon (1) the anticipated net yield and (2) the rate of interest at which this anticipated yield is capitalized. An increase in the discount rate of 1 per cent should cause a rise in the long-term interest rate by at least $\frac{1}{8}$ of one per cent. This in turn should cause an average fall of $2\frac{1}{2}$ per cent in the price of new fixed capital goods. Because of the ease of postponing the purchase of capital goods, a modest decline in their value must discourage their purchase and production. Particularly, Keynes holds, will sudden shifts in the long-term rate of interest vary the ability of underwriters and borrowers to sell securities whenever such changes are expected

¹⁰ For a statement of Hawtrey's position, see his *Currency and Credit*, New York, Longmans, Green & Co., 1928, 3rd ed., pp. 24-27, and his *Good and Bad Trade*, London, Constable & Co., Ltd., 1913, pp. 61-63. To support his contention that middlemen are especially exposed to changes in interest rates, Hawtrey cites data given in Professor M. T. Copeland's *Principles of Merchandising*, New York, A. W. Shaw Co., 1924. In the wholesale grocery trade, gross profits on sales amounted to between 11 and 12 per cent, net profit varied between 4 and 6 per cent, while interest paid amounted to between 1.5 to 1.7 per cent of sales. In the wholesale drug business, gross profits were 17 per cent of sales, net profits were between 7 and 1.1 per cent, and interest paid was between 1.9 and 2.4 per cent. In wholesale dry goods, gross profits were 17 per cent of sales, net profits were 1 per cent, and interest paid was 2.8 per cent. In wholesale automotive equipment, gross profits were 24.9 per cent of sales, net profits were 1.5 per cent, and interest paid was 2 per cent. Therefore, he argues, any change in short-term interest rates will easily influence the size of net profits: *Art of Central Banking*, New York, Longmans, Green & Co., 1932, pp. 367-371.

to be temporary. Only when the rise in the market rate of interest is counterbalanced by an equal rise in anticipated earnings from capital (which might occur if prices are rising) would the higher interest rates fail to cause a fall in the price of new fixed capital.¹¹

Keynes' view, therefore, is that a change in the discount rate is reflected in the change in long-term interest rates. This in turn (1) affects the price level of capital goods and (2) changes the rate of new investment. A rise in the rate of interest discourages investment; savings become greater than investment; and consumers' incomes, employment, and prices of consumers' goods fall. A decline in the rate of interest causes just the opposite results.

Keynes believes that the main response to a change in the long-term or bond rate of interest will occur in the building, transport, and public utility industries rather than in manufacturing. The effects are accentuated, moreover, by the reaction of underwriters who accept new issues freely if security prices are rising (the bond rate falling) and refuse new issues, even though borrowers may be willing to pay higher interest rates, if security prices are falling.¹² Only when the long-term or bond rate of interest rises above or falls below the "natural" rate, of course, will it cause changes in the rate of investment and in the price level. He does not claim, however, that changes in the bank rate can cause any instantaneous adjustment in investment and the price level.

Keynes agrees that changes in the short-term interest rates may influence somewhat the volume of investment in working capital and liquid merchandise stocks. Unlike Hawtrey, he does not believe that the volume of investment in working capital *directly* responds to changes in the discount rates. Instead, he believes that because short-term interest rates influence long-term rates, changes in short-term rates arouse expectations of price changes and thereby induce changes in investment in short-term capital. Further, he holds that bankers relax their credit requirements in times of easy money and lend to borrowers whose loan applications would be rejected if interest rates were high and money scarce.

The validity of Keynes' explanation rests upon the assumption that changes in the short-term interest rate are accompanied by changes in the same direction, though not necessarily of the same

¹¹ Keynes, J. M., *Treatise*, Vol. I., pp. 200-209.

¹² *Treatise*, Vol. II, pp. 364 and 368-369.

magnitude, in long-term interest rates. It is necessary, therefore, to examine the correctness of this assumption.

The connection between short- and long-term interest rates. It is reasonable to suppose that there is some connection between short-term and long-term interest rates, since to some extent both borrowers and lenders may switch from one type of loan to the other. For example, if short-term interest rates fall, there will be a tendency for (1) some individuals to borrow at short term and lend long (by the purchase of securities) and for others to (2) postpone new long-term borrowing by the substitution of temporary short-term borrowing. Further, banks, insurance companies, and other lenders may tend to change the proportion of their short- to long-term loans by increasing the relative volume of their bond holdings. The result of these various changes must cause some fall in the long-term or bond rate of interest. Conversely, if short-term rates rise, greater pressure will be felt on borrowing at long term while the profitability of borrowing short and lending long will be lessened. The result will be some increase in long-term rates.¹³

The similarity of movement of long- and short-term interest rates. The similarity, both in time and direction, between the movements of short- and long-term interest rates is well known. Keynes cites Riefler's findings that all important changes in short-term interest rates between 1919 and 1928 were reflected in changes in bond yields.¹⁴ Keynes believes that only rarely can there be a shift in short-term interest rates without some corresponding movement in bond yields. It is not necessary or even probable that changes in bond yields will be of the same magnitude as changes in the short-term interest rates. In fact, he finds that a change of short-term rates of 1 per cent is commonly accompanied by an approximate change of $\frac{1}{4}$ of 1 per cent in long-term rates.¹⁵

¹³ Cf. Riefler, W. W., *Money Rates and Money Markets in the United States*, New York, Harper & Bros., 1930, Chapter VI. Also see Hawtrey, R. G., *The Art of Central Banking*, pp. 379-384, and Keynes, *Treatise*, Vol. II, Chapter 37.

¹⁴ Riefler, *op. cit.*, pp. 117 and 123. Hawtrey is unimpressed by Keynes' statistical evidence showing an interrelation between short- and long-term interest rates. See his *Art of Central Banking*, p. 378, and his *A Century of Bank Rate*, London, Longmans, Green & Co., Ltd., 1933, pp. 168, 169, and 185.

¹⁵ A later study of the relation between short- and long-term interest rates can be found in F. R. Macaulay's *Movements of Interest Rates, Bond Yields, and Stock Prices in the United States Since 1866*, New York, National Bureau of Economic Research, 1938, Appendix A. He estimated the time lags in four series comprised of call money rates, commercial paper rates, American railroad bond yields, and American railroad stock prices. He found that the high point in call

A comparison of Hawtrey's and Keynes' positions. Hawtrey holds that changes in short-term interest rates directly influence the volume of short-term investment in merchandise stocks by wholesalers and other middlemen. In this way he finds a direct and almost immediate connection between the discount rate and the forces affecting the price level. In Keynes' view, the influence of the discount rate is roundabout and the consequences more remote. As an instrument of credit policy, the discount rate therefore holds more promise under Hawtrey's view than under Keynes'. According to Hawtrey, the response of middlemen to changes in discount rates is rapid, and time is the very essence of credit control. Once an expansion or contraction in consumers' income and outlay develops, it is cumulative. To be successful, therefore, credit control must operate promptly to break the vicious circle and start the movement of investment and prices in the desired direction.¹⁶

money rates preceded the high point in commercial paper rates by two months, the high point in the yield on railroad bonds by four months, and the low point in stocks by five months. On the other hand, the low point in call money rates preceded the low in commercial paper rates by two months, the low in bond yields by six months, and the high in railroad stock prices by nine months. Pp. 219-221.

¹⁶ *Art of Central Banking*, pp. 383-384.

CHAPTER XXXVI

THE VALUE OF GOLD MONEY

SO FAR in our discussion of the causes determining the value of money, our analysis has dealt with the supply of and the demand for pure money without reference to whether or not it has any commodity value. In other words, we have concentrated our attention upon the purely monetary forces that operate upon the value of money. Our analysis, therefore, is quite as applicable to fiat or inconvertible paper money as to money having commodity value. Because of the historical importance of gold in the world's monetary systems, it is necessary that we examine the forces which determine the value of gold money. Fundamentally, the value of gold within the monetary system is determined by the already familiar factors determining the value of any money. Nevertheless, there operates upon the value of gold money another set of forces that do not enter into the determination of the value of inconvertible paper money, namely, the cost of production of gold and its nonmonetary demand.

The equality of the money value and bullion value of gold. The value of gold money must equal the value of the bullion that composes it. This restriction necessarily arises from the privilege, which exists under the gold standard, of freely converting gold bullion into money and money into bullion. It makes no real difference whether the actual coinage of gold is permitted, or whether paper money representatives are issued against gold held in bullion form. There is, of course, a small cost involved in converting gold from one form to the other, either in the cost of waiting or as direct charges sometimes made by the government. Owing to these costs, a slight discrepancy between the values of gold money and gold bullion may exist, but the difference is normally too small to be significant.¹ Because of this

¹ The shift of gold from one form to the other generally appears as a diversion of a greater or less part of the current gold output into one use or the other. Seldom is there much actual shifting of old gold stocks from one category to the

interrelation between the monetary and the bullion forms of gold, it is necessary that we examine the forces operating to determine the value of gold in both uses.

The relation between the cost of gold and its value. Like other products of the extractive industries, gold is produced under conditions of increasing cost. This means that, under any given conditions, an increase in the output will raise the costs of production.

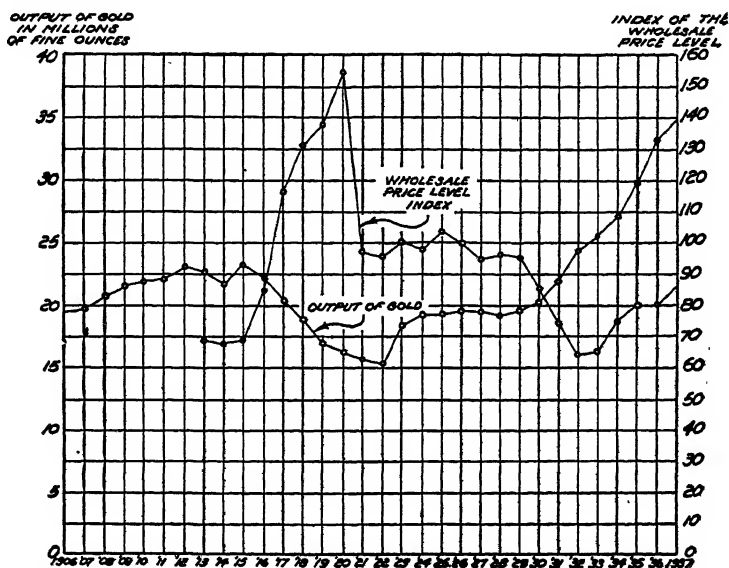


CHART 30. ANNUAL WORLD OUTPUT OF GOLD AND THE CHANGES IN THE INDEX OF THE WHOLESALE PRICE LEVEL IN THE UNITED STATES.

Before examining the relation between the value of gold and its cost of production, we should note two characteristics of the supply of gold that tend to modify that relationship. The first is the speculative nature of gold mining, which has attracted many prospectors and producers who have operated at a loss in the hope of some day striking it rich. The second is the durability of gold, causing the supply to represent the accumulated production of many years. The supply of gold available at any one time is, therefore, but remotely related to the current rate of gold output. But, as in the case of other commodities produced under conditions of increasing cost, there is necessarily a tendency

other. However, after 1931, a very considerable volume of gold was dishoarded by India and found its way into the world's monetary systems.

toward equality between the value of gold and its marginal cost, which asserts itself even in relatively short periods. For example, when the price level rises, the cost of producing gold measured in current prices rises also. Since under the gold standard the statutory price of gold is fixed (\$35 per fine ounce in the United States), the rising marginal dollar costs of gold production will meet the statutory price of gold at a lower output than before. A falling price level, on the other hand, brings with it declining marginal costs of producing gold and permits a larger output before the marginal costs meet the statutory price. Therefore, at any given price level, the output of gold is adjusted to the point where marginal costs of its production equal its value.

But this adjustment of output to the point of equality between the value of gold and its marginal cost represents only a short-run equilibrium. For example, let us assume a sudden increased demand for gold and a subsequent rise in its value. The increased value of gold permits an increase in gold output to the point where marginal costs equal its value. But if the annual output of gold at its new high value is greater than the annual growth in the demand for gold, the accumulated gold will so increase the total available supply that the value of gold will fall. This must continue until the declining gold output, caused by its declining value, is absorbed by the current demand for additional gold, both in the arts and as money. Only then can it be said that a long-run equilibrium has been established.

A fall in the costs of gold mining due to new discoveries or improved production methods will tend to establish a new long-run equilibrium which will reflect the new cost conditions. The immediate effect will simply be an expansion in current output. Because the value of gold will be but little affected at first by the increased output, the reduced cost of mining will not cause any appreciable reduction in the value of gold. But the increased output will gradually modify the total supply, and, unless offset by growing demand, the value of gold must fall. The new point of long-run equilibrium will tend to be reached when the current gold output is just absorbed by the demand for this output.

It should be apparent, therefore, that the fundamental supply factor, the cost of production of gold, is very slow in establishing anything resembling a long-run equilibrium in the value of gold. Explanations of the value of money based upon the cost of production of gold are, therefore, of little short-run use, for only over long periods of time do production costs make themselves felt.

The supply of gold for monetary uses. Unlike other commodities, gold is demanded both for its want-satisfying capacity as a commodity and for its purchasing power as money. It follows that the value of gold is affected by both uses. The non-monetary demand for gold is of two types: that arising from use in industry and the arts, and that arising from hoarding. The first use requires no particular explanation save to note that the industrial demand for gold tends to be elastic—that is, the amount used responds readily to changes in the relative value of gold—and that it is subject to absolute changes with variations in style, business conditions, and economic well-being.²

Demands for hoarding arise primarily in the Orient, with India, that great sinkhole of precious metals, taking the bulk of the hoarded gold. Once it is hoarded, gold is seldom brought to light again into the monetary systems of the world. The inflow of gold into Oriental hoards does not raise prices and automatically shut itself off, for the gold does not become a part of the money system of the importing country. Nevertheless, the depreciation of the British pound in terms of gold after it became inconvertible in September, 1931, did result in a very substantial volume of dishoarding by India.

Since both the monetary and the nonmonetary demands for gold operate on a common supply of newly mined gold, any relative increase in the demand for one use tends to divert a larger part of the new supply into that use. In a very real sense, therefore, the new gold which becomes available for monetary uses is dependent on the pressure exerted by the nonmonetary uses of gold, and it expands and contracts as the nonmonetary demand declines and increases. This is the reason for the interest in the nonmonetary demand for gold exhibited by students of the problem of long-run price stability.

A relative increase in the monetary demand for gold, leading to falling commodity prices and a rising value of monetary gold, acts to divert a larger part of the newly mined gold into monetary channels. To the extent that the nonmonetary demand is elastic, the diversion from nonmonetary to monetary uses may be quite substantial. This elasticity adds to the relative stability of the monetary value of gold in the face of fluctuations in monetary demand.

²See Edie, Lionel D., *Money, Bank Credit, and Prices*, New York, Harper & Bros., 1928, Chapter XIII, for a careful analysis of the nonmonetary demand for gold. Also see the *Interim Report*, 1930, of the Gold Delegation of the Financial Committee, League of Nations.

The monetary demand for gold. Let us first assume that all money is specie or paper money representatives of specie, and that there is no credit money. Under these simple conditions, it is easily seen that the demand for money impinges directly upon the supply of monetary gold and fixes its value. But this is an unreal simplification of the question. Under the gold standard in actual practice, monetary gold is lodged in the reserves of the banking system, and the media of exchange which actually feel the impact of monetary demand consist of bank checking accounts and bank notes.

The effect of monetary demand on the value of gold when credit money comprises the media of exchange: fixed reserve ratios. To explain the manner in which monetary demand affects the value of gold when currency in use is made up of paper money and bank credit, let us assume that a fixed ratio is constantly maintained between the volume of paper money and bank credit and the volume of gold itself. This ratio, determined by custom or law, is, of course, the reserve ratio of the banking system. Now let us suppose that the demand for money increases. With no change in the supply of credit money, the result must be a rise in the value of such money or a fall in the level of prices expressed in terms of it. But because credit money may be freely converted into gold and gold into credit money, any change in the value of the latter must necessarily bring about an equal change in the value of gold money. Similarly, a fall in the demand for money that lowers the value of credit money must likewise cause an equal lowering of the value of gold.

The effect of monetary demand on the value of gold when credit money comprises the media of exchange: flexible reserve ratios. The above analysis is based upon the assumption that a rigid relationship exists between the volume of monetary gold and the volume of credit money. Put in another way, it assumes that the banking system is constantly "loaned up" to the limit set by the available gold reserves and the customary or legal reserve requirements. But in actual fact, this is not always true. There frequently exists in the banking system a very sizable amount of reserves in excess of minimum requirements. These excess reserves are generally held by the central bank and form the basis for its advances to the commercial banks. Because of this situation, an increase in the demand for money is normally paralleled by a corresponding increase in credit money. In this way, an increase in the demand for money will fail to cause an

increase in its value. This highly desirable result is the basis for the belief that bank credit should be "elastic" and respond to the "needs of business."

Unfortunately, this elasticity in the supply of credit money may entail a volume of money in excess of the basic economic requirements for a stable price level and a stable value of money. Businessmen's attempts to expand their available capital by resorting to borrowing at the banks result in an excessive quantity of credit money, so that the value of money falls instead of rising in the face of an increased demand. This occurs during periods of boom or price inflation.

During periods of declining industrial output and declining trade, the supply of bank credit money tends to shrink, so that the value of money does not fall in the face of a declining demand for it. Because the supply of this credit money results from the lending and investing operations of the banks, such money sometimes tends to shrink faster than does the demand for money. The results are a rising value of money and a falling price level.

To summarize, if the proportion of gold reserves to credit money is a fixed one, any change in the demand for money will immediately cause a corresponding change in the value of money, both gold and its credit substitutes. But when the proportion between the volume of gold reserves and credit money is not rigidly fixed, changes in the demand for money may be accompanied by changes in the supply of credit money. When the forces operating to change the supply of credit money cause it to vary by an amount greater than that necessary to meet the varying demand, the value of money may fall in the face of a rising demand or may rise in the face of a shrinking demand. This situation characterizes booms and depressions. The tendency for money to overexpand during periods of good business and to overcontract during times of bad business is what is meant by the "perverse elasticity" of credit money and is the basis of much of the criticism of the behavior of our present monetary and banking system.

The Quantity Theory versus the Bullionist Theory of the Value of Money

A comparison of the quantity theory with the bullionist approach. At this point it is well to recognize the existence of two rather extreme views that are sometimes held in respect to the causes underlying and determining the value of money. One

view stresses the point that money, as such, possesses a value that is not dependent upon any intrinsic worth of the substance from which it is made; that, rather, it derives its value from the fact that it is useful in making purchases and paying debts. For example, the State in establishing a certain monetary standard gives it the quality of acceptability by making it legal tender and by receiving it in payment of taxes.³ Even without formal sanction by the State, certain objects which in themselves have little if any intrinsic value sometimes acquire the social sanction of custom and thus become valuable as money. According to this view, money is acceptable because of law or custom, and the value of any particular unit of money depends upon the quantity of money available to perform the money work. This is the essence of the quantity theory of money, which in one form or another is very generally accepted by economists today.

On the other hand, there is a school of thought which takes an almost opposite view. Its adherents believe that money derives its value neither from the sanction of the State nor from its monetary uses. Instead they hold that money is simply a commodity, and that its value, like that of any other commodity, derives from its utility and its cost of production. It is different from other commodities mainly because it is unusually well supplied with the qualities that make it acceptable. This approach to the value of money is known as the "commodity theory." Those who adhere to the particular variant of the commodity theory that has had the most influence in the United States are sometimes known as the "Bullionists."⁴

The bullionist theory of money.⁵ Starting from the position that money is simply a commodity whose value is derived in the same manner as any other commodity, the bullionists hold that the value of any standard monetary unit is derived from the value of that amount of the commodity contained in the unit. According to this view, a dollar, which is $15\frac{5}{21}$ grains of

³ This is sometimes known as the "chartel" theory of money. Cf. Ellis, Howard E., *German Monetary Theory*, Cambridge, Harvard University Press, 1934, pp. 21, 37-38. Money without commodity value, whether accepted because of law or custom, is known as "nominal" money.

⁴ Ellis lists three shades of opinion among the commodity theories, namely: the supply and demand theory, represented by Helfferich; the marginal utility theory, represented by Mises and Wieser; and the metallists or bullionists, of which the best-known supporter in the United States was the late J. L. Laughlin. *German Monetary Theory*, pp. 59 et. seq.

⁵ For an excellent statement of the bullionist position, see Laughlin, J. L., *A New Exposition of Money, Credit, and Prices*, 1931, Vol. II, Chapters XXIV-XXVI.

nine-tenths fine gold, is worth as much as the gold contained therein—no more and no less. It is the law of supply and demand operating upon gold bullion to determine its value that fixes the value of the monetary unit.⁶ Starting from this view, the bullionists proceed to the following propositions:

1. The value of all deposit currency and all paper money, whether government notes or bank notes, is derived directly from redemption in the standard money commodity.

2. Because it derives its value from the redemption in commodity money, credit money (deposits and notes) is valuable only so long as it is redeemable or has some prospect of future redemption. If ultimate redemption in bullion is no longer anticipated, it is valueless, since money in itself can have no value outside of its commodity value.⁷ As evidence of this argument, bullionists cite the depreciation of the United States greenback in terms of gold bullion during the Civil War when the premium on gold rose and fell with the defeat or victory of the Union armies.⁸ It should be noted, however, that the fluctuating price of gold did not accurately measure the changes in the value of greenbacks in terms of things other than gold.⁹

3. The value of money is not dependent upon its quantity. The bullionists admit that the value of monetary gold would be reduced by an increase in the supply of gold that lowered the value of gold bullion. The quantity of gold money itself, however, does not affect the price level. The monetary demand for gold affects its value only by absorbing part of the supply and thus enhancing its commodity value.

4. The pricing process is a comparison of the value of a unit of gold with the value of a unit of goods. Out of this comparison, the price is fixed. Money is then put to use merely to effect the exchange.

5. In no direct way can the volume of bank credit affect prices. Bank credit gets its value from the value of the bullion in which it is redeemable. After the prices are determined, bank credit may be created for use as a medium of exchange. Bank credit,

⁶ This view is partially valid under the gold standard to the extent that the value of gold bullion, under free coinage, cannot deviate from the value of gold coin by more than the cost of converting it from one form to the other.

⁷ This conception is, of course, directly opposed to the idea developed in the preceding section concerning the effect of the monetary demand for gold.

⁸ Cf. Mitchell, W. C., *History of Greenbacks*, Chicago, University of Chicago Press, 1903, pp. 187-238.

⁹ *Ibid.*, p. 245.

therefore, springs into existence after prices have been arrived at, and its volume is dependent upon the activity of business and the level of prices. The bullionist visualizes the causal relation moving from prices to bank credit. But because the banking system is able to create bank credit for use as a medium of exchange, the monetary requirements for gold are lessened, more gold is left for bullion uses, and its value is therefore less than it would be in the absence of bank credit.

6. The volume of both credit and standard money responds to price movements and business activity. When a shortage of bank reserves develops, more reserves will be forthcoming, for higher interest rates attract specie from other areas and countries.

7. Changes in the price level are largely due to changes in the cost of producing goods rather than to changes that affect gold.

An evaluation of the bullionists. The bullionists find it difficult to meet some of the attacks made upon them by the quantity theorists. Yet there is some merit in their argument that cyclical price increases arise from an increase in the value of commodities and result in bank credit expansion in sufficient amount to make the price increase possible. Certainly, at such times, the profitableness of owning goods rises sharply. The bullionist view, in the short run, is at least preferable to the bald view sometimes advanced in the name of the quantity theory, that bank credit is created in proportion to the volume of bank reserves and is instrumental in forcing prices up. On short-run grounds, therefore, the bullionist view of the relation of the volume of bank credit to the price level is undoubtedly superior to the simpler forms of the quantity theory. The attacks of the bullionists upon the quantity theory have contributed something to the modification of the position of the quantity theorists in respect to short-run price movements.

The bullionists have failed, however, to establish their contention that paper money can have no value save that derived from its redemption in specie. Further, they are unable to prove that the pricing process is simply one of comparing the value of commodities with the value of a unit of gold money. The latter position is especially weak in the light of experience with currency devaluation. For example, a strict application of this idea in 1933-1934, when the gold content of the dollar was being reduced by a little over 40 per cent, would have required an im-

mediate rise in commodity prices in terms of gold dollars by more than 60 per cent.¹⁰

While there is much that is valid in their position in regard to the short-run relation between the quantity of money and the level of prices, their position on causes of long-run price changes is weak. The rather lame explanation that the level of commodity prices is determined by the cost of production leaves entirely unanswered the question of what underlying forces determine the money cost of the factors of production. It remains for the quantity theory to throw some light upon this problem.¹¹

¹⁰ Cf. Bernstein, E. M., *Money and the Economic System*, Chapel Hill, University of North Carolina Press, 1935, p. 186.

¹¹ For an exposition showing the controversy between the bullionists and the quantity theorists, see Phillips, C. W. *Readings in Money and Banking*, New York, The Macmillan Co., 1916, pp. 159-210.

CHAPTER XXXVII

INTERNATIONAL PRICE RELATIONSHIPS UNDER THE GOLD STANDARD

Interregional Domestic Trade and Prices

The similarity between domestic and international trade. A decided similarity exists between interregional trade within a single country and international trade under the gold standard. Because of the familiar nature of the forces that operate in the domestic market, it will be of aid in studying the less familiar processes of international trade to examine first the interregional price relationships that exist within one country.

Interregional domestic price structure. The various specialists engaged in production are presumably located in areas best suited to their particular needs. Trade between these specialists, therefore, is interregional in nature. To the extent that monopoly does not interfere with the mobility of the factors of production, the prices of goods produced by these specialists tend roughly to correspond to their costs of production. The cost of production in any one industry is, of course, the market value of the services of the several factors of production that are used. This market value, or rate of reward to the factors of production, is simply the marginal product of these factors in their general use in other industries. In the long run, the factors of production enjoy a relatively high mobility between different industries within a given country. Factors of any given grade of efficiency, therefore, tend roughly to have the same marginal product and to receive the same reward regardless of the industry in which they are employed.¹ One may conclude from this observation that goods which are produced and sold in the domestic market tend to be exchanged on a basis of substantial equality in respect

¹ Obviously this is but a rough approximation to actual facts. Fixed capital frequently earns income much below the going rate of interest. Social and economic conditions often tie laborers to one industry or to one location where they earn less than the wages of similar grades of labor elsewhere.

to the quantity of the factors involved in their production. To be located in one industry rather than another tends to offer no particular advantage in the long run. To use a phrase common in discussions of international trade, the "terms of trade" are substantially equal. Exception must, of course, be made to industries operating under monopolistic control.²

The effects of a shift in demand for the product of a given area in the domestic market. Let us suppose that District A devotes its energies to making shoes. Under equilibrium conditions, the factors of production used in the manufacture of shoes receive the same income as similar factors in other areas engaged in other types of production. Let us now assume that the increased popularity of riding in motor cars, manufactured in District B, causes a decline in the demand for shoes. As a result, the price of shoes falls (unless monopolists in the shoe trade choose to maintain the price and sell fewer shoes), and the income of residents in District A is reduced. What adjustments will occur to meet this new development?

The lowered money incomes of the inhabitants of District A must cause them, sooner or later, to reduce the scale of their purchases of the products made in other areas. If we assume that the shoe-manufacturing trade is sufficiently competitive to lead to continued sales at lower prices, the "terms of trade" have turned against District A, for its shoemaking endeavors enable it to obtain smaller quantities than before of the goods produced in other districts. But the increased demand for motor cars produced in District B will increase the money incomes of its inhabitants. Eventually the more attractive rewards of the motor car industries will cause a transfer of an appropriate volume of the factors of production from shoemaking to the manufacture of automobiles. This transfer may involve an actual physical migration from one district to another or a movement of the automobile industry into District A. In any event, equilibrium tends to be restored, with prices in each district again reflecting the relative amounts of the factors involved in the production of their respective goods.³

² Whenever monopoly exists in a particular industry, it may enable the owners to trade with the rest of the economic world on somewhat better terms than can the owners of competitive industries. This advantage may be accomplished by restricting output and increasing the rewards going to owners' capital. Similar benefits in the terms of trade may accrue to groups of laborers that monopolize certain trades.

³ A change in the foreign demand for the products of a country engaged in international trade will be unlikely to lead to such a restoration of the pre-existing

Changes in interregional capital movements. Let us suppose that part of the savings of the inhabitants of District *B*, normally invested in the industries of that district, are suddenly diverted to investment in District *A*. This shift in the direction of capital investment from *B* to *A* immediately increases the supply of money available to *A* at the expense of *B*. If borrowers of capital in *A* wish to buy the same type of capital equipment as that previously purchased by the displaced borrowers of *B*, the resulting readjustment will be a simple one. The new borrowers in *A* will purchase the output of the capital goods industries of *B*, and the only disturbance will be a decline in the rate of growth of capital equipment in *B*. But if *A*'s capital equipment requirements cannot be met by the producers in *B*, but instead must be produced by *A*, prices and incomes in the capital goods industries of *A* will rise while those of *B* will fall. In the last analysis, labor and capital either will shift from *B* to *A*, where they will aid in the production of capital goods, or, under the compulsion of low prices, will rearrange themselves so as to be in a position to produce in *B* the equipment wanted in *A*. Either or both of these adjustments may be made within an individual country. If neither adjustment were possible, District *B* would have to resign itself to lower incomes and a lower price structure that would enable it to develop a net excess of exports to *A* equal to the net capital investments made in *A* by the savers of *B*.

Shifts in the direction of investment within a single country may command little attention because of the ease with which lending districts can adjust themselves to meet the new capital goods demands of the borrowing districts. Moreover, the ease with which the domestic banking system copes with the diversion of funds from one area to another helps to minimize the disturbance. When the domestic banking system is closely knit, a shift in the location of funds does not embarrass the banks in the lending areas nor require credit restriction due to losses of reserves. This condition does not always prevail in the case of changes in international capital movements. During the interval between the time when the new lending occurs and the time when equilibrium is again established by the development of a favorable export balance by the lender, the heavy drain upon

"terms of trade" as is the case in purely domestic trade. The reason for this difference lies in the marked immobility of the factors of production between countries. For this reason, a country which experiences a decline in the demand for its exportable goods will tend to have its price level and money incomes permanently lowered, and will continue to trade with other countries on less favorable terms than before.

the gold reserves of the lending country's banks may cause serious difficulty.

The effect of a failure of crops in one area. Let us suppose that District *C*, which is engaged in agriculture, experiences a failure of crops. Being deprived of its exportable products, District *C* will experience a fall in money incomes. In their attempt to continue their purchases from other areas, the inhabitants of *C* must reduce their cash balances to a thinner margin, and funds will flow out of *C*. Unless the banks of *C* are closely affiliated with banks in other areas through a branch system, or are able to borrow freely from other areas, distress will be felt by banks and farmers alike in District *C*. In this situation, no corrective is found in an adjustment of prices. Only borrowing outside to tide over the emergency in District *C* will suffice.

International Trade and Price Relationships

The resemblance of international trade to domestic trade. Under the international gold standard, the relation between the price structures of the several countries closely resembles in one basic respect that between prices within a single country: both international and domestic prices are expressed in terms of gold. Just as disturbances to domestic trade equilibrium, which lead to an unequal balance of domestic payments, generate forces tending to re-establish equilibrium, so disturbances to the equilibrium of international balances of payments generate forces tending to restore equilibrium.

The restorative forces generated by disequilibria in the international balance of payments may meet with more resistance than do the corrective forces in domestic trade. For instance, under the gold standard a disequilibrium in the balance of payments requires a transfer of money from the country having an unfavorable debt balance, which we may call the debtor country, to the country having the favorable debt balance, which we may call the creditor country. This may require more than the mere shifting of book credits within the banking system, which suffices in the case of most domestic adjustments. The shipment of gold not only involves some expense in shipment and conversion into the currency of the creditor country but also may put strain upon the monetary and banking system of the debtor country. If the transfer of gold quickly leads to shrinkage of credit, prices, and imports of the debtor country and to an increase in credit, prices, and imports of the creditor country, no disastrous consequences to the monetary structure of the

debtor country will result. When disturbances to equilibrium in the balance of payments are of small magnitude, the corrections normally occur smoothly and easily. But if the causes underlying the debtor's unfavorable balance do not respond readily to gold movements and the resulting corrective price adjustments, the loss of gold continues and may become so serious as to compel the complete abandonment of the gold standard by the debtor country. Such a situation may arise: (1) in the agricultural countries whose exports suffer acute loss of demand owing to world-wide depression; (2) in agricultural countries whose exports shrink severely on account of crop failure; (3) when the internal price structure of the debtor country is too inflexible to make easy and rapid response to gold movements; (4) when the creditor country imposes credit restraints to prevent gold imports from affecting prices; (5) when the loss of gold arises from a flight from the debtor country's currency; (6) when creditor countries impose high tariff and quota restrictions to keep out imports.

The Balance of Payments

All discussions of the problems of international trade revolve around the basic question of the balance of payments. Under the gold standard, payments arising out of international trade are primarily handled by the cancelling of one debt against another, leaving a small residual amount to be paid in gold. If undue gold losses are to be avoided, a substantial equality of debits and credits is necessary. Under inconvertible paper currencies, when gold in fixed amounts may no longer be obtained for currency, it is necessary to strike a balance between a country's import and export items, for the international currency is no longer available for making settlements.

The nature of the balance of payments. The nature of the international balance of payments may be seen by examining the debit and credit items which go to make it up. On the debit side should be listed the following items: (1) commodity imports; (2) imported services, including those of shipping, insurance, and services of a financial and personal nature; (3) expenses of travel in foreign countries; (4) remittances of immigrants to relatives abroad; (5) interest and principal payments owed foreigners; (6) the export of capital, which may take the form of the purchase of foreign real property and long-term foreign securities, and the purchase of short-term foreign claims in the form of bank balances and acceptances, and the purchase

TABLE 65

BALANCE OF INTERNATIONAL PAYMENTS OF THE UNITED STATES, 1939
(In Millions of Dollars)

<i>Trade and Service Items:</i>	<i>Receipts from Foreigners from Exports (Credits)</i>	<i>Payments to Foreigners for Imports (Debits)</i>	<i>Net Debits (—) and Credits (+)</i>
Merchandise	3,241	2,362	+ 879
Freight and shipping	125	249	— 124
Travel expenditures	170	469	— 299
Personal remittances	45	144	— 99
Institutional contributions .....	...	43	— 43
Interest and dividends	531	211	+ 321
Government transactions	32	96	— 64
Miscellaneous services	147	59	+ 88
Total	4,291	3,633	+ 657
<i>Gold and Silver:</i>			
Gold exports and imports	1	3,575	— 3,574
Gold earmarking operations (net) .....	...	...	+ 534
Net gold movements .....	...	...	— 3,040
Silver exports and imports	14	85	— 70
<i>Capital Items:</i>			
Long-term capital movements	1,624	1,510	+ 114
Short-term banking funds .....	...	...	+ 1,116
Miscellaneous capital items (net) .....	...	...	+ 69
Paper currency movements (net) .....	...	...	+ 117
Total			+ 1,416
<i>Other Transactions and Residuals</i>			+ 1,037

abroad of internationally traded securities. On the credit side of the balance of payments will appear: (1) commodity exports, (2) exports of all sorts of services, (3) interest and principal received on foreign investments, (4) expenditures of foreign tourists here, and (5) capital imports of all kinds.

Temporary inequalities in the debit and credit sides of the balance of payments may be corrected, under the gold standard, by short-term capital movements. For example, an excess of debit items tends to cause an export of gold and an increase in interest rates. The higher interest rates encourage the import of foreign short-term capital (a credit item), which assists in restoring equilibrium and reduces the necessity for the outflow of gold.

But short-term capital movements that offset short-time disturbances to the balance of payments cannot or ought not to be relied upon to offset the more permanent, long-term disequilibria which develop. In order for the gold standard to operate properly, it is necessary that a substantial equality be maintained between the more basic elements in the balance of payments. The maintenance of a proper equality between debit and credit items, therefore, involves the adjustment of the price and cost structures of the several trading countries so that visible and invisible items, over and above short-term capital movements, are in substantial balance.

International price equilibrium. Like all concepts of equilibrium used in economic analysis, international price equilibrium is not an actually existing state. Rather, it is a relation between the price levels of the different countries that *tends* to result from powerful economic forces operating in the international markets. But certain forces are constantly appearing to disturb this equilibrium. Prices rise and fall, crops flourish and fail, the demand for commodities that move in international trade changes, the direction and magnitude of international capital movements shift. Only when the forces tending to maintain equilibrium in the balance of payments are sufficient to counteract these disturbing factors and promptly to restore a substantial degree of equilibrium, can the international gold standard operate successfully.

The price levels of the several gold standard countries are in equilibrium whenever, disregarding purely seasonal variations, claims arising from the exchange of goods, services, and titles to securities (including interest and principal payments but excluding short-term capital movements) cancel out. Under such circumstances, gold movements to pay for unfavorable debt balances are unnecessary. This state of international price equi-

librium does not, of course, require an equality of values in the exchanges between any two countries. Rather, it merely requires that the import items of each country and its export items to the rest of the world shall in the aggregate be equal. Thus, an excess of imports from one country may be offset by an excess of exports to other countries. If the full advantages of trade are to be realized, the various aptitudes of different countries for producing economic goods are almost certain to require a balance of this sort rather than an equality of imports from and exports to any single country. The propensity of the United States to produce large quantities of agricultural as well as manufactured products makes it inevitable that our exports of raw materials to England should exceed the value of our imports from her. But from countries able to supply some of our needs for materials, South America for example, we buy more than we sell, while England in turn exports to them a net excess of manufactured goods. This three-cornered trade relation, commonly used to illustrate the multiple-sided character of foreign trade, is more typical of actual international trade than would be a simple two-way illustration. Actually, of course, the triangular trade example does not indicate the full complexity of the balancing operations in foreign trade that frequently involve transactions between a large number of nations.⁴ Moreover, it must be remembered that international price equilibrium does not require that the prices of all commodities be equal in different countries. Nor does it mean that average money incomes are the same in the several countries. What, then, is involved in international price equilibrium?

The Relation Between Prices at Home and Abroad

Prices of goods that move in international trade. Whenever a competitively sold commodity moves freely in international trade, its price in terms of gold in the exporting country will

⁴ It is not appropriate here to examine the economic principles that determine what commodities will move in international trade under a free economy. Such a study belongs in the specialized field of international trade. For an analysis of these principles, see Ohlin, Bertil, *Interregional and International Trade*, Cambridge, Harvard University Press, 1933, Part III; Taussig F. W., *International Trade*, New York, The Macmillan Co., 1927; Haberler, Gottfried von, *The Theory of International Trade*, New York, The Macmillan Co., 1937, Chapters IX-XII; and Viner, Jacob, *Studies in the Theory of International Trade*, New York, Harper & Bros., 1937. For an interesting analysis of some of the causes operating to determine when long-term capital movements will occur between countries, see Angell, James W., *Theory of International Prices*, Cambridge, Harvard University Press, 1926, pp. 381-382.

differ from its price in the importing country only by the cost of transferring it between the two countries.⁵ The gold prices of internationally traded commodities, in the absence of monopolistic dumping, therefore tend to move in parallel.

Home market or sheltered commodities. The basic factor that determines whether or not a commodity will move in international trade is the relative production costs in the different countries. Whenever the cost of production in Country *A* is below the cost in Country *B* by an amount in excess of the cost of transfer, the commodity will move from Country *A* to Country *B*. It follows, therefore, that the costs of transfer have a large bearing upon the international flow of commodities. Whenever a commodity's weight, bulk, or propensity to deteriorate makes transfer difficult, the possibilities of any sort of inter-regional trade are limited. Such commodities may move short distances but are incapable of moving into distant markets. Tariffs which must be paid on many goods entering foreign markets constitute sizable barriers in the way of international trade. When pushed to its logical conclusion, a protective tariff may become so high as to prevent altogether certain goods from entering international markets. Personal services, which cannot be divorced from the individual producing them, provide another example of economic goods that cannot freely enter international trade, for the export of a service of this sort depends upon the ability of its producer to move into the foreign country long enough to perform it for the inhabitants of that country, or upon the ability of the foreigners to cross the boundary line and consume the service on the spot. To a limited extent such exchange of personal services regularly takes place among the inhabitants who live near to the boundary. There have been times when the people of the United States have purchased very sizable quantities of foreign services by travel abroad.

Those commodities that for all practical purposes are economically not transferable are called "home market" or "domestic" commodities, and as such they do not enter into international trade.⁶ The home producers of such articles are protected from

⁵ This covers all costs, both customs duties and shipping costs, which must be incurred in the interregional movement of goods. The cost of transferring goods that commonly do not enter international trade but may do so if costs become sufficiently favorable includes the costs of making new trade contacts abroad. Cf. Angell, *op. cit.*, pp. 378-379.

⁶ It should be noted that commodities may sometimes be exported to a near-by foreign country while transportation costs may prevent their sale in remote parts of the home market.

foreign competition and domestic prices are not directly influenced by the changes in prices of similar articles abroad. The producers of these articles are in a "sheltered" economic position, and the commodities themselves are sometimes known as "sheltered" commodities, to contrast them with "unsheltered" commodities that move freely in international trade.

Many commodities are more or less on the border line between home market or sheltered goods and international or unsheltered goods. Any change in the cost of production or in the price of such a commodity, or a change in the transfer costs, may shift it from the category of domestic to international goods, and vice versa. To the extent that the costs of transfer allow only a limited movement of such goods in international trade, they are partially sheltered.

Gold Standard Equilibrium and International Prices

When the international balance of payments of a gold standard country is in equilibrium, its price structure is such that, taking visible and invisible items into account, its exports are equal to its imports. Equilibrium is disturbed whenever the value of import and export items becomes unequal. Unless other forces promptly act to restore equilibrium in the balance of payments, gold must flow, and there must occur appropriate changes in the level of costs and prices at home and abroad.

When fundamental conditions have disturbed the balance of payments, price adjustments must take place if equilibrium is to be restored. But it is inadequate to show merely that the selling prices of internationally traded goods change and thus correct the trade balance. So long as there is any actual transfer of such goods in international trade, their prices tend constantly to be equalized, save for their transfer costs, regardless of whether the balance of payments is equal or unequal. The readjustments required for the basic equilibrium in the balance of payments must therefore go further than a change in *prices* of international goods. This equilibrium involves changes in the *costs of production*, or in the prices of the factors of production involved in making these goods. For it is changes in the cost of production that determine the extent to which commodities fall into the category of international goods capable of entering international trade. In the short run, when most factors of production have sticky prices, adjustments in the profits of entrepreneurs engaged in exporting, rather than changes in costs, may occur. But the willingness of producers to take losses rather than suffer a shrink-

age of export markets must be supplemented eventually by readjustments in costs, if an unfavorable balance of payments is to be corrected.

The shift in relative costs, upward in a country having a favorable balance and downward in a country having an unfavorable balance, changes the degree of shelter afforded commodities by the transfer costs. Commodities previously just on the exportable margin can no longer be sold abroad when a favorable balance of payments results in rising costs. Falling costs in countries having an unfavorable balance of payments expand the list of exportable commodities by releasing some goods that were previously too costly for export. It is in this manner that a change in prices and price levels promotes a restoration of equilibrium in the balance of payments.

The effect of conditions of increasing cost. Because some domestic trades are industries of increasing cost, a country sometimes is able profitably to supplement its domestic production of a commodity with imports from abroad. The English wheat trade provides a familiar example of such industries. Some wheat may profitably be produced by English farmers for sale in the English market. But English farmers, having but a limited supply of available land, are unable to supply all of the wheat needed by the local population. Beyond a certain point, added production of domestic wheat incurs costs which exceed the cost of importing wheat from the great growing areas outside. Any change in the transfer cost involved in importing wheat and any change in the cost of growing wheat at home or abroad will change the relative proportions between the amount of wheat produced at home and the volume of imported wheat. For example, if an unfavorable balance of payments is tending to force down the English price level, a larger part of the wheat consumed in England will be produced at home and less will be imported. Thus, marginal quantities of wheat are shifted from the category of international to that of domestic goods.

The relation of domestic or sheltered goods to international price movements under the gold standard. As we have already observed, the prices of commodities that enter the international markets move in parallel, with prices in the export country below those of the importing country by an amount equal to the costs of transfer. Prices of goods of the semi-sheltered class are similarly, though not so rigidly, related, because any marked change in prices and costs may move them into the unsheltered category and lead to international shipments.

Prices of completely sheltered or purely domestic goods are in no direct way connected with prices of similar goods abroad. For example, there is no direct reason why the price of a given sort of stone house in England should resemble that of a similar house in Indiana, since price differences cannot be great enough to make it profitable to move either the house or the material of which it is made from one place to the other. Nor will the effects of any price differences be likely to affect materially the volume of tourists who might go to live in the low-cost houses.

Nevertheless, there is an indirect connection between the price levels of completely sheltered goods in different gold standard countries. This connection lies in the common origin of all economic goods produced in any given region or country. Basically, the same factors of production are involved in the production of both sheltered and unsheltered goods. Thus, when the price of factors of production used to make unsheltered goods are increased (because of international price movements), by the principle of opportunity costs the prices of factors used in making sheltered goods will tend to rise also. The degree of lag involved, of course, depends upon the degree of mobility of the factors of production between the sheltered and unsheltered goods industries. Furthermore, raw materials used in the production of sheltered goods may themselves be unsheltered and enter the international markets, while sheltered raw materials may be used in the manufacture of unsheltered goods. If domestic or sheltered goods have close substitutes that move freely in international trade, the prices of such domestic goods are exposed to the influences of international price movements.⁷

In spite of what we have been saying about the forces that tend to connect international price movements with the prices of purely domestic goods, it does not follow that there need be any exact equality of price for a domestic good in the different gold standard countries. The rewards of the factors of production involved in producing domestic commodities in a given country must be substantially the same as those producing goods that enter the export trade. The factors of production in one country may be more efficient than those of other countries. If so, their money rewards will be higher than the rewards of less efficient factors elsewhere. To illustrate, if Country A, using 1,000 units of factors of production, produces \$1,000,000 worth of goods, which it sells to Country B, and Country B in turn uses 2,000

⁷ Cf. Ohlin, *Interregional and International Trade*, pp. 152-156.

units of factors of production to produce \$1,000,000 worth of goods for sale to Country A, the balance of payments between A and B will be in equilibrium so far as their price and income structures are concerned. But the factors of production in Country A will be worth \$1,000 per unit, while those in Country B will be worth but \$500. Now, although the factors in either Country A or Country B must necessarily receive approximately the same rate of reward whether producing purely domestic goods or goods for export, the price of any given type of sheltered commodity in one country will correspond closely to the price in the other country only if the relative inefficiency of the factors in B is as great in the production of the sheltered commodity as in the production of goods for export. This is unlikely to be true. Let us suppose that in Country A 3 units of factors of production are required to build a house of a given type. Because the price of each unit of factors is \$1,000, the house would cost \$3,000 and would not be produced unless its value was at least \$3,000. If factors of production required to build a similar house in Country B have the same absolute efficiency at house building as do the factors in Country A, then 3 units of factors in Country B would also provide a house. But because of the relative inefficiency of the factors of Country B in producing products for export, their money price is but \$500, so that the cost of the house in Country B would be but \$1,500. Under these assumed conditions, the price of the house in Country A would be \$3,000 and in Country B \$1,500 with no disturbance to the equilibrium in the balance of payments. Only if 6 units of factors were required in Country B to build the house would its price there be \$3,000.⁸

Methods of Settling Accounts in Interregional Trade

Before proceeding with our study of the manner in which equilibrium in the balance of payments is maintained, it will be well to examine the methods by which settlements are made in interregional trade. In principle, such settlements offset claims of one area against those of another so far as possible and pay only the net amounts that cannot be cleared by offsetting. The method of making these net payments and the consequences of such payments constitute the problem which now confronts us.

The settlement of domestic interregional debt balances. Within a given country, the appearance of an adverse trade balance in one area gives rise to a flow of money payments from that

⁸ For a good discussion of this point, see Harrod, R. F., *International Economics*, New York, Harcourt, Brace & Co., 1933, Chapter IV.

area to the areas having a favorable balance. To pay the adverse trade balance, depositors of banks in the debtor area send checks in excess of checks received to creditors in other areas. These payments may require currency movements from banks in debtor areas to banks in creditor areas. If so, checks on banks in the debtor area will be accepted by banks in creditor areas at a discount equal to the cost of shipping the currency. If some impediment to the free movement of currency appears, such as a suspension of the drawee banks or an obstruction to the operation of transportation facilities, the discount on such checks (or drafts) may become substantial. Before the development of the Federal Reserve System in the United States, it was common for checks to sell at a discount. The whole system of exchange charges that existed at that time was in part an outgrowth of the cost of shipping currency from one area to another. Today the cost of domestic interregional transfer of funds has been reduced to a minimum by the development of the Federal reserve collection system and the use of the Interdistrict Settlement Fund. In countries having large-scale branch banking systems, the necessity for currency shipments between districts is largely obviated by the ability to shift credits within each branch system.

Settlement of international debt balances under the gold standard. The settlement of international debt balances can seldom avoid the costs incident to the movement of the standard international currency. To be sure, temporary debt balances may be cared for by a shift in short-term capital, a matter to which we shall give more attention later. But debt balances due to basic changes in the balance of payments cannot safely be settled in this manner. Unless the creditor country is willing to earmark gold for storage in the debtor country or is willing to use some form of the gold exchange standard, the cost of gold shipments assumes a place in the problem of settlements.

In foreign trade transactions, it is customary for settlement to be made by the drawing of drafts by exporters (and other creditors) upon debtors in other countries. Thus, American exporters of goods, services, and securities may be thought of as the originators of foreign bills of exchange in this country. These bills of exchange, demanding payment from foreign debtors, make up the supply side of the foreign exchange market. The drawers of these drafts are able to convert them into domestic currency by selling them to the foreign exchange bankers, who send them abroad to foreign bankers with whom the American bankers carry accounts. The foreign correspondent banks undertake to pre-

sent these drafts and collect the proceeds, which are then credited to the American bankers' balances. American importers, on the other hand, being indebted abroad, make payments by purchasing and remitting drafts drawn on the foreign banks from the American foreign exchange bankers.

Insofar as the money value of all import and export items (visible and invisible) are equal, the buyers of foreign exchange bills will absorb the supply. But if export items are greater than the import items, the bankers who are buying the exporters' bills will find their holdings of foreign balances (or foreign exchange) piling up in undesirable amounts. This situation necessarily brings a lowering of the price offered for foreign bills by the bankers. On the other hand, an excess of import items over exports tends to result in a higher price for foreign bills, since some importers cannot be accommodated by the bankers who find themselves unable to purchase enough foreign bills to enable them to meet the importers' demands.

Under the gold standard, however, there is a limit to the possible variations in the prices of foreign bills of exchange. The relative gold content of the currency units of different countries (or the gold into which the currencies may be converted) is known as "mint par." When there are no abnormal barriers to the process of converting currencies into gold, it is impossible for the value of bills of exchange payable in foreign currencies to fall to a price less than mint par minus the cost of converting such bills into gold and bringing the gold back to the point of origin. Thus, before England left the gold standard in 1931, mint par between the dollar and the pound was $\$4.8665 = \pounds 1$. Since it cost approximately \$.02 per pound to pay the costs of bringing the gold back from England to the United States, the price of drafts payable in pounds could not fall below $\$4.8665 - \$.02$, or $\$4.846$.⁹ When, on the other hand, an excess of import items causes a shortage to appear in the supply of foreign exchange (or drafts) needed by American debtors to make remittances abroad, the price of foreign bills will not rise above mint par by more than the cost of converting dollars into gold, shipping the gold across, and converting it into pounds. Thus, pound drafts will not rise in price, under our assumption of a mint par of $\$4.8665 = \pounds 1$, above $\$4.8665$ plus about \$.02. These maxi-

⁹ The cost of shipping gold varies with interest rates, which may be lost on gold in transit, freight and drayage charges, and other incidental expenses. Late in 1933, the cost of shipping gold from London to New York was estimated at about \$.27 per fine ounce.

mum and minimum prices of foreign bills of exchange are called the *gold import* and the *gold export points*. Whenever the pressure of excessive imports or exports (visible and invisible) drives the rate of exchange to the gold points, gold will begin to be shipped to settle international debt balances.

CHAPTER XXXVIII

THE MAINTENANCE OF EQUILIBRIUM UNDER THE GOLD STANDARD

The Establishment of International Price Equilibrium

WE HAVE already examined the nature and meaning of international price equilibrium and the relationship which must exist, under the gold standard, among prices in different countries or regions. Our next problem is to learn something of the mechanism by which disturbances to equilibrium in the balance of payments are offset and corrected.

Reasons for disequilibrium in the balance of payments. A number of different occurrences may be responsible for disturbances to equilibrium in the balance of payments. One important cause of disturbance may be a change in the foreign demand for a country's exports. This may arise from changes in consumers' tastes abroad, from the development of cheaper or better supplies in other countries competing in the international export market, or from changes in transfer costs. Another source of disturbance may appear in some catastrophe of nature which destroys the current supply of exportable goods. A world depression may cause a sharp shrinkage in the demand for a country's exports, both raw materials and manufactured goods. Cyclical fluctuations within the country, with the accompanying inflation and deflation of prices, tend to disturb the balance of payments. Sizable changes in the direction and volume of long-term international lending sometimes prove embarrassing both to debtor and to creditor countries; while the abrupt and heavy movements of short-term capital—the result of flight from currencies suspected of weakness—sometimes prove disastrous because of their violent and cumulative nature.

Corrective forces arising from international disequilibrium. It is clear that the gold standard can operate only if the drain of gold out of countries which develop adverse debt balances can be

stopped before it goes so far as to jeopardize the safety of currency and banking systems of those countries. Long experience with the gold standard indicates that in the ordinary course of events the necessary corrections may actually take place smoothly and without too much disturbance. Since 1931, many writers have attacked the gold standard on the grounds that it cannot meet the strain put upon it. But these attacks, based largely upon the very real difficulties growing out of the depression of 1929-1939, must not cause us to lose sight of the fact that the gold standard did, in fact, operate with reasonable success over a long period of years.

The classical theory of international trade sought to explain the maintenance of equilibrium conditions between the price structures of the gold standard countries by resort to the quantity theory of money. According to this view, an unfavorable debt balance for one country causes foreign exchange rates to rise to the gold export point, and an outflow of gold results. Applying the quantity theory, the loss of gold reduces the volume of bank reserves, causes a shrinkage of credit, and leads to a fall in the price level. On the other hand, countries having a favorable debt balance gain gold. As a result, credit expands and prices rise. Thus, equilibrium is restored by a downward adjustment of prices in the country with an unfavorable balance of payments and a rise in prices in countries with favorable debt balances.¹

Some serious criticisms of the classical explanation may be made. First, it relies for its validity upon the assumption that gold movements result in *prompt* changes in the price level. Clearly, if the gold standard is to work smoothly and efficiently, the forces tending to re-establish and maintain international price equilibrium must operate rapidly and positively enough to prevent any serious inroads upon the gold supply of a country suffering an unfavorable debt balance. A failure of these forces to result in a prompt re-establishment of equilibrium conditions endangers the ability of countries losing gold to maintain the convertibility of their currency. In spite of the long-run validity of the assumption that prices vary directly with changes in the quantity of standard money, it cannot be depended upon in the short run. The classical view that high prices attract goods, repel gold, and lead to an unfavorable balance of payments is of

¹ Cf. Taussig, F. W., *International Trade*, New York, The Macmillan Co., 1927, pp. 198-199. For a detailed examination of the classical theory, see Viner, Jacob, *Studies in the Theory of International Trade*, New York, Harper & Bros., 1937, Chapter VI.

little value in explaining the often observed phenomenon that gold flows into a country where business is expanding and prices rising, and flows out of countries suffering from depression and low prices. Because of the serious question of the effectiveness of gold movements in bringing about immediate price changes, attempts have been made to develop more realistic explanations of the method by which international price equilibrium is established and maintained.²

Spontaneous forces tending to restore international price equilibrium. What are sometimes called "spontaneous" causes tending to restore and maintain international equilibrium rest primarily upon a shift or transference of purchasing power. According to this view, a country having an adverse or unfavorable balance of payments loses purchasing power by an amount equal to the deficiency. On the other hand, countries having a favorable balance of payments receive additional purchasing power. Now this approach is not dissimilar to the classical explanation based upon gold movements, but there is this essential difference. The theory based upon spontaneous causes attempts to show that the corrective forces of shifting purchasing power may appear before gold movements occur. In such a case, the movements of gold may be avoided altogether. But if some gold movements do occur, the spontaneous forces fortify and supplement the corrective influences of the gold movements.

An example of the appearance of spontaneous correctives may be seen in the case of a country confronted by a failure of its exportable crops. Unless imports promptly shrink to the same degree as do exports, a serious loss of gold is likely to follow. To what extent may such a shrinkage of imports be expected to occur? The failure of crops must necessarily curtail the money incomes of the growers and exporters. To the extent that such individuals are direct purchasers of imported goods, the shrinkage in their incomes must necessarily tend to cause an immediate and positive reduction of imports. Only to the extent that they are able and willing to reduce their customary cash balances, or to increase their bank loans, will their demand for imported goods decline less than the decline in value of exports. When export-

² For a discussion of the criticisms of the classical theory, see Haberler, Gottfried von, *The Theory of International Trade*, New York, The Macmillan Co., 1937, Chapter III. Also see Angell, James W., *The Theory of International Prices*, Cambridge, Harvard University Press, 1926, Chapter XIV. Angell points out that the majority of the Continental economists have never accepted the English classical theory (pp. 365-368).

ers do not buy imported goods but instead buy the products of domestic producers who in turn are the purchasers of imports, the reaction on imports of a decline in exports is more remote and likely to be somewhat longer delayed. In this case, there is a greater possibility of continuing the purchase of imports by depleting cash balances. In addition, the spontaneous tendency of imports to shrink will be checked if businessmen are sufficiently optimistic to replenish their cash by borrowing from a banking system able and willing to expand its loans.³ If the unfavorable balance of payments develops to the point where gold must be exported, the loss of gold may *accompany*, rather than *cause*, a shrinkage in credit, imports, and business activity resulting from the decline in exports. This is not to deny, of course, that the loss of gold may in turn cause a rise in discount rates and contribute deflationary pressure, which tends to reduce imports.

Spontaneous corrections that may appear in connection with changes in international capital movements. An adverse balance of payments arising out of changes in the direction or volume of international lending may likewise induce the appearance of spontaneous correctives. For example, let us suppose that Country *A* increases its loans to Country *B* by expanding the purchase of Country *B*'s securities. Sellers of these securities in Country *B* will come into possession of bills of exchange on Country *A* which will be sold to banks of Country *B* in return for deposits. The purchase of these bills by the banks of Country *B* is conditioned, of course, upon their possession of some excess reserves. To the extent that borrowers in *B* spend their new funds for the purchase of increased amounts of capital goods from Country *A*, exports from *A* will rise sufficiently to offset its new loans to *B* without any need for a change in the price level in either country. But if borrowers in *B* require larger amounts of capital goods of the type produced only at home, the solution is not so simple. To restore the balance of payments now requires that some other reason be found for an expansion of *A*'s exports and *B*'s imports. This might occur spontaneously as a result of the expansion in *B*'s capital goods industries if the raw materials needed are available in *A*. But there is likely to be required some change in the credit and price system of both coun-

³ For an exposition of this view, see Paish, F. W., "Banking Policy and the Balance of International Payments," *Economica*, November, 1936, pp. 409-413. For a discussion of the automatic restoration of equilibrium, see also Heilperin, M. A., *International Monetary Economics*, New York, Longmans, Green & Co., 1939, pp. 151-156.

tries if any very sizable readjustment in the balance of payments is to be accomplished.

It is entirely possible that an adjustment in the price and credit structure may occur without any substantial movement of gold between the two countries. The decline in the demand for capital goods in Country *A*, assuming that borrowers in *B* do not purchase their new capital there, may cause a slump in business activity and some decline in credit and prices. In Country *B*, on the other hand, the stimulating effects of added pressure on its capital goods industries will promote credit and price expansion. Borrowers in *B* will sell their foreign exchange to their banks in exchange for deposits and currency. If the banks in *B* are already supplied with excess reserves, this can occur smoothly and readily. If the banks are able and willing to expand their domestic credit structure upon the basis of foreign exchange reserves carried abroad, a very considerable adjustment can be achieved without the movement of gold. Under these circumstances, the shrinkage of credit in *A* may permit the withdrawal of gold from *A* to *B* without any pressure resulting directly from the gold movement. In such a case it need not be said that the corrective changes in prices and credit arose out of the gold movement, but rather that the gold movement facilitated the process of adjustment automatically set in motion by the original international capital movement.⁴

Spontaneous corrections and disequilibrium arising from domestic boom. A purely domestic boom accompanied by rising prices tends to expand imports and to reduce exports, and therefore tends to develop an unfavorable balance of payments. If rising interest rates result from the pressure of credit expansion upon bank reserves, or if speculative attractions of soaring security prices become sufficiently great, foreign capital may be attracted and gold brought in. These imports of capital postpone the appearance of the correctives required to restore the basic equilibrium in the balance of payments. Nevertheless, some spontaneous correctives may appear in connection with the disturbances accompanying boom conditions within a single country. An expansion in business activity in one country, by stimulating export industry abroad, tends to spread to other countries. When this occurs, the disturbance to the balance of payments is reduced, for the expansion of purchasing power abroad promotes a restoration of equilibrium.

⁴ For a detailed examination of this approach, see Bertil Ohlin's *Interregional and International Trade*, Cambridge, Harvard University Press, 1933, Chapter XX.

Gold Movements and International Price Equilibrium

To the extent that readjustments are not brought about promptly or completely by the spontaneous or automatic forces arising directly out of occurrences responsible for disequilibrium in the balance of payments, gold movements must take place. Countries with favorable balances will gain gold at the expense of countries having adverse debt balances. Before gold movements will occur, however, foreign exchange rates in a country having a favorable balance of payments must decline to the gold import point. A mild though not altogether negligible corrective factor appears in connection with this movement of exchange rates. The fall in foreign exchange rates encourages imports and discourages exports. Within the limits set by the gold import and export points, exchange rates will move in a manner which acts to restore equilibrium in the balance of payments.

Gold movements and the restoration of equilibrium. Gold movements between countries operate to affect the balance of payments in several ways. First, the import and export of gold have a direct effect upon the volume of purchasing power within the countries involved. In the absence of offsetting operations by the central bank, the export of gold directly reduces the supply of effective money of the exporting country. Similarly, the effective money supply of the gold-importing country increases by an amount equal to the gold gained. Such primary effects of gold movements upon the purchasing power within the countries concerned appear regardless of whether or not any secondary results in the form of multiple expansion or contraction of bank credit accompany them. Second, gold movements normally have some effect upon the discount rates. Unless the banking system is adequately fortified with a generous supply of excess reserves, the export of gold will cause some tightening of the money market and some rise in the discount rate. Likewise, the import of gold will lead to easier money rates in the importing country unless its banks are already in possession of excess reserves.

The changes in discount rates, just referred to, set in motion two separate and distinct forces, each of which helps to check the outflow of gold. The first of these, which develops quickly and assists in dampening down the pressure upon the debtor country's gold supply, is the movement of short-term capital into the debtor country in response to the higher discount rate. The

second operates more slowly to remedy the fundamental causes of disturbance in the balance of payments. It takes the form of stimulating business activity, prices, and imports when the discount rate falls because of gold imports, and of reducing business activity, prices, and imports when the discount rate is increased. Each of these will now be examined.

Short-term capital movements and the balance of payments. The gold standard, working properly and commanding general confidence, provides the certainty which is required if short-term capital is to move freely between international money markets in response to differences in the discount rates. Short-term capital movements mainly take the form of the purchase of (1) bank balances, (2) bankers' and trade acceptances, (3) treasury bills, and (4) long-term internationally traded securities. The increase in the discount rate within the country having an adverse balance of payments induces the purchase of short-term claims against it by foreign bankers and other foreign investors. This action increases the credit side of the balance of payments and helps, temporarily, to restore equilibrium.

Some adverse debt balances arise from accidental or seasonal variations in trade. Given sufficient time, such variations will largely cancel out. In such cases the movement of short-term capital in response to differences in the discount rates quickly checks the movements of gold and minimizes them. Furthermore, some corrective short-term capital movements may occur without discount rate changes. For example, if the United States develops an unfavorable trade balance regularly each summer, with a reversed situation during the winter months, foreign bills of exchange will be dear in summer and cheap in winter. If there were no speculative dealings in foreign exchange, rates would tend to move to the specie moving points, and gold would be shipped to meet the temporary disequilibrium in the international balance of payments. But, because of the predictable and regular seasonal nature of the movements of the balance of payments and the protection afforded by the gold points, American bankers are able to purchase foreign bills during the winter while they are cheap, collect the proceeds, and invest them abroad. Later, when foreign bills are dear, they will dispose of these foreign funds by offering drafts drawn against them in the foreign exchange markets. All this will occur *without* any gold movements and *without* discount rates being higher abroad than at home. This practice, common under the full international gold standard, involves excessive hazards under inconvertible

paper, so that, without the gold standard, corrective movements of short-term capital are much less likely to take place.

Short-run capital movements which assist in the restoration and maintenance of equilibrium in the balance of payments may be described as "equilibrating" to differentiate them from the "disequilibrating" short-term capital movements which characterize "flights" from currencies under suspicion. The equilibrating type of short-term capital movements occur regularly, as we have just seen, in a well-established world gold standard, and largely depend upon confidence in the several currency systems. The disequilibrating type of short-term capital movements, on the other hand, occur in times of international financial panic and tend to upset the equilibrium in the balance of payments instead of helping restore it. The disequilibrating type of capital movements will be examined more fully later.

Even when disturbances in the balance of payments arise from causes other than regular seasonal developments, some short-term capital may move to the country which is temporarily experiencing an adverse balance, since bankers may anticipate that a reversal will shortly be forthcoming. In many cases, however, irregular and unpredictable adverse balances of any great size are unlikely to attract short-term capital in sufficient quantity to prevent altogether an outflow of gold.

Basic corrections in the balance of payments resulting from changes in discount rates. The import or export of long-term capital constitutes one important item in the balance of payments of many countries. The export of long-term capital, evidenced by a net inflow of foreign securities, is a debit item in a country's balance of payments. A change in the discount rate will cause some change in long-term interest rates, which in turn may affect the volume of such foreign lending. This may occur because of the effect of interest rate changes upon the absolute volume of capital which foreign borrowers will take, or because a change in interest rates relative to rates ruling in other international loan markets will cause a shift away from or to those other markets, as the case may be.

A second corrective result of a change in discount rates arises from the effect of such changes on domestic business activity. A rise in the rate tends to retard while a lowering of the rate tends to expand the rate of business operations. For example, if the discount rate is increased and business activity declines, two influences are put to work to correct an unfavorable balance of payments. The first and most immediate result is to cause

a decline in imports. The second result, more remote and perhaps more basic, is the decline in prices and costs which the slackening of business brings about. On the other hand, if a favorable balance of payments leads to an import of gold and a drop in the discount rate, the resulting expansion in business activity will stimulate imports and lead to higher prices.

Gold movements without corrective effects on the balance of payments. The full corrective effect of gold movements appears only if changes in the gold supply cause equal changes in the reserve funds of the banking system. Further, through the operation of the discount rate, the change in reserves must lead to corresponding and proportional changes in the volume of bank credit if corrections are to appear that are of greater significance than the spontaneous ones discussed earlier. But neither of these results may be forthcoming. The extent to which the commercial banks make use of available reserves to support their credit structures varies with the state of business. In depression, excess reserves may pile up, as we so well know. During prosperous times, on the other hand, the banks are generally "loaned up." Still more important are the varying and unpredictable credit practices of central banks. To illustrate, the central bank may adopt any one of three policies following the receipt of newly imported gold. First, it may remain passive and allow the imported gold to increase the commercial bank reserves. Second, it may choose to offset the effect of the gold imports upon bank reserves by reducing its holdings of securities. Third, it may permit the newly acquired gold to become a base for new bank reserves in excess of those created directly by the gold imports. To accomplish this, it may lower the rediscount rate or purchase securities in the open market. Similarly, the central bank may ignore, nullify, or magnify the effect of gold exports.⁵ Without doubt, central bank managers, in the formulation of their credit policies, believe that they are guided by the highest motives, the foremost of which is the desire to stabilize or improve internal business conditions. However, the offsetting of gold movements in the interest of domestic stability, as practiced by central banks, reduces the corrective forces contributing to maintenance of equilibrium and therefore handicaps the operation of the gold standard. Furthermore, whenever an agency of the treasury or a

⁵ It is difficult to discover a sufficiently well defined pattern of central bank policy to permit any safe predictions as to the behavior of central banks. Cf. Viner, *Studies in the Theory of International Trade*, pp. 391-392.

stabilization fund operates to prevent gold movements from affecting bank reserves, the corrective effects are limited altogether to the spontaneous forces arising from the shift in purchasing power.

Moreover, some gold movements take place which tend to aggravate rather than correct the basic disequilibrium in the balance of payments. Such occur whenever high interest rates and speculative increases in stock prices, accompanying a domestic boom, cause an inflow of short-term capital requiring an import of gold. During such a time, imports flourish, exports are discouraged, and, were it not for the inflow of short-term capital, the balance of payments would appear unfavorable and gold would be exported. A loss of gold in such a case is needed to check the boom in prices and restore equilibrium. But when gold moves in instead of out, it accentuates rather than corrects the basic disequilibrium in the balance of payments.

Finally, gold movements which arise between countries whenever international financial panic seizes the world's money markets cannot be thought of as assisting to maintain equilibrium in the balance of payments. Early in 1931, in certain countries economic pressure due to the depression led to financial collapse followed swiftly by general panic. Deprived of the certain protection of the gold standard by the threat of a general abandonment of gold, short-term capital frantically began to seek security by moving rapidly away from money centers that were under suspicion to those believed to be safe. Under these circumstances, gold movements required to accommodate the shifts in short-term capital were in no way related to the requirements for basic equilibrium in the balance of payments. Furthermore, when interest rates rise within a country which loses gold in this manner, a return flow of short-term capital is not induced. The propensity of short-term capital to flee from real or fancied insecurity completely overcomes its normal tendency to be attracted by higher interest rates. The flight of short-term capital at such times contributes seriously to the breakdown of the international gold standard.

The Time Involved in Restoring Equilibrium in the Balance of Payments

Having examined the corrective forces that operate to restore and maintain equilibrium in the balance of payments, we are now ready to consider the question of the rapidity with which these correctives may be expected to act. The ease and rapidity with

which equilibrium in the balance of payments is restored after having been disturbed depend upon the circumstances which exist within the countries involved.

The ease of readjustment as related to types of commodities involved in foreign trade. The ease and rapidity with which a country's balance of payments may be restored to equilibrium depend to a great extent upon the type of commodities which make up its imports and exports. For example, if a country with an adverse debt balance normally imports high-priced consumption goods and durable goods, it will find it relatively simple to reduce the value of such imports because of the ease of postponing the purchase of durable goods and the possibility of switching from the purchase of high- to lower-priced consumption goods. The loss of income and purchasing power which results from the adverse balance of payments will tend to bring the shrinkage in imports just mentioned. In contrast, a country that imports foodstuffs and raw materials while exporting high-grade finished products may find it difficult to readjust its balance either by expanding its exports or by reducing its imports.⁶

Ease of restoration of equilibrium as related to the magnitude of the disturbances. The restoration of equilibrium in the balance of payments may be easily and swiftly achieved when the disturbing forces are relatively small and temporary in nature. In the absence of wars and acute, prolonged depression, disturbances, though constantly appearing, are in fact small, and restoration of equilibrium occurs smoothly and successfully. In contrast, in the face of powerful and continuous disturbances of the sort arising from war debts, war indemnities, and severe depressions, the corrective forces which successfully restore equilibrium under ordinary circumstances are unequal to their task. This is well illustrated by the difficulties which arose in connection with the reparations transfers and the breakdown

⁶ Cf. F. W. Paish, "Banking Policy and the Balance of International Payments," *Economica*, November, 1936, pp. 413-422. He points out that countries whose imports are largely marginal or which have a "high marginal propensity to import" are likely to be producers of raw materials. Such countries tend to adjust their trade balance easily. Advanced industrial countries, on the other hand, have a "low marginal propensity to import" and do not adjust so easily. If the latter countries are also international banking centers, the strain on their monetary structure may be eased by an inflow of foreign-owned short-term balances. For a statement of the problem of adjusting merchandise movements to re-establish equilibrium in the balance of payments, see Viner, *Studies in the Theory of International Trade*, pp. 307-311. Also see a series of articles by B. Ohlin and J. M. Keynes on the German Reparations transfer problem which appeared in the *Economic Journal*, Vol. XXXIX, 1929.

of the gold standard after 1929, which will be examined in Chapter XLV.

A comparison of the speed of readjustments arising out of spontaneous causes with the rapidity of readjustments arising out of gold movements. Spontaneous causes tending to restore equilibrium in the balance of payments arise out of the transference of purchasing power from the debtor to the creditor country. This transference occurs in the form of a reduction of incomes of persons living in the country experiencing the unfavorable debt balance (whether it arises from a failure of exportable crops, from an expansion in foreign lending, or an increased volume of imports). On the other hand, persons living in the country having a favorable debt balance will find their incomes somewhat increased. This increase appears either with or without the movements of gold.

Altogether, there is a rather formidable array of factors tending to restore the basic equilibrium of cost and price levels among the countries of the world by the transference of purchasing power among countries whose balance of payments is not in equilibrium.⁷ Because of their immediate and direct effect upon incomes within the countries whose balance of payments is disturbed, these spontaneous forces act without delay to promote a restoration of equilibrium. It is the prompt results that may be expected which make the spontaneous correctives significant.

In contrast, the corrective forces, other than the spontaneous ones, released by international gold movements operate indirectly and with much less promptness. Except for the spontaneous results, to be effective gold movements must cause some change in the rate of interest. A rise in the interest rate inside the debtor country tends to attract short-term capital and minimizes the outflow of gold during the time required to carry through the longer process of a shrinkage of business activity and prices. The relative slowness of readjustments arising from gold movements points to two possible though very different conclusions. The first conclusion, frequently heard since 1931, holds that an international gold standard can hardly be maintained in times of severe dislocations in the balance of payments, for gold movements required during the slow and painful process of readjustment must become unbearably burdensome to debtor countries. The second conclusion is quite the opposite in tone. It holds that the successful operation of the gold standard over

⁷ Cf. Angell, *Theory of International Prices*, Chapter XVI.

long periods in the past shows that spontaneous correctives must have been operating powerfully enough to preserve equilibrium without any great assistance from discount rate changes growing out of gold movements.

Maintenance of international equilibrium without changes in the discount rate. In support of the view that spontaneous causes play a much more vital part in the maintenance of international equilibrium than has been commonly credited to them, one may cite the practices of some central banks before the First World War, when successful adherence to the gold standard was achieved without resort to frequent or corrective changes in discount rates. For instance, both the National Bank of Belgium and the Bank of France appear to have paid little attention to gold movements in the determination of their discount policies.⁸ Furthermore, a stable discount rate policy was at one time adopted by the Bank of England, which, during much of its history, has provided a most illustrious example of the use of a changing discount rate to protect gold reserves and to maintain equilibrium in the balance of payments.

The compulsion felt by the Bank of England to manipulate the discount rate as a means of protecting its gold reserve may be understood in the light of London's position as an international money center. Foreign banks found it both convenient and profitable to carry large amounts of funds deposited in London banks and invested at short term in the London money market. The profitableness of leaving these funds in London depended upon the interest rate there as compared with rates at home. By changing its discount rate, the Bank of England was able to influence the rate of interest earned by these foreign-owned balances, and therefore could use its discount rate policy to control the volume of short-term funds which foreigners would place in the London money market. Carrying relatively small gold reserves, the Bank of England quite naturally adopted the discount rate as the surest and most convenient method of protecting its balance of payments from excessive gold drains arising from the removal of short-term balances. Furthermore, because of London's powerful place in the international long-term loan market, the British balance of payments was exposed to the irregular and uncertain pressure which arose out of any sudden expansion in the volume of long-term British foreign invest-

⁸ Cf. Whale, P. B., "The Working of the Pre-War Gold Standard," *Economica*, February, 1937, p. 20.

ments. An increase in the discount rate also helped to ease the pressure from this source by attracting additional short-term funds from abroad. The most powerful threat to the Bank of England's gold reserves came from long- and short-term capital movements, and both of these were subject to control through the discount rate.

The Bank of England, however, did not always follow the policy of exercising control over gold movements by adjusting the discount rate. During the periods 1891-1893 and 1901-1915, to avoid disturbing the domestic money market, it repeatedly resorted to changes in the price of gold while allowing the discount rate to remain unchanged. In addition, it was able to use this method to supplement the bank rate and to control gold movements when the bank rate was ineffective owing to the Bank's being out of contact with the market. The method of controlling gold movements by changing the price at which gold is bought and sold may best be understood if one keeps in mind that, so long as British currency was unquestionably redeemable in a certain amount of gold, movements of gold to and from England were determined on the basis of profit. Any changes in the cost of importing or exporting gold, therefore, influenced gold movements. For example, when the current rates of interest in London were such that foreign funds were just on the margin of indifference in respect to moving into London, any drop in the cost of importing gold, any bonus offered for gold imports, would tip the balance, and gold would move to London. Similarly, if at current rates of interest short-term capital were just on the margin of leaving London in search of greater earning power in other markets, any hindrance which increased the cost of exporting gold would prevent the outflow.⁹

⁹ The Bank of England had two ways in which it was able to lessen the cost of importing gold. First, although it had the statutory duty to purchase standard gold bars ($1\frac{1}{2}$ fine) at £3 17s. 9d. per ounce, it might when it chose pay a higher price. By paying this higher price, the Bank granted a bonus or subsidy to the gold importers. Second, the Bank could reduce the cost of importing gold by making advances to banks, without interest, against gold in transit. This relieved the importing bank of the cost involved in the loss of interest on gold in shipment. By changing its selling price, the Bank was able to impose restraint upon gold exports. The law required the Bank to redeem its notes in gold coin, the equivalent of £3 17s. 10½d. per ounce of standard gold. For the convenience of the purchasers of gold for export, the Bank commonly sold gold in the form of gold bars or gold coin of the country to which the gold was to be shipped. But if it wished to place a barrier in the way of gold exports, the Bank could stand upon its legal rights of redeeming its notes in standard British sovereigns. To escape the added cost of converting British coin into bars or into foreign coin, the exporter would prefer to pay a premium for such bars or coin. By raising its selling

The success attained by the Bank in its efforts to control gold movements by changing its buying and selling price for gold rested largely upon the sensitivity of short-term capital to opportunity for profits. For example, whenever the Bank was maintaining its buying and selling price for gold at a high level, with no change in interest rates, it became worth while to acquire and hold London funds and speculate on the almost certain prospect that a dearer pound and a lower price of gold, corresponding to the statutory price, would presently appear.

The experience of the Bank of England, when it successfully controlled the movements of short-term capital and gold without relying upon changes in the discount rate, throws some light upon the strength of the spontaneous forces that operate in the interests of international equilibrium. Modest changes in the buying and selling price of gold, while exercising control over gold movements arising from the sensitive shifts in short-term capital, could hardly have been of any substantial short-run influence upon the other basic items comprising the British balance of payments. The success with which the Bank of England was able to pursue a stable discount rate policy during the above-mentioned periods may be taken to indicate that the spontaneous forces operating to establish and maintain equilibrium in the balance of payments are more powerful than is sometimes believed. This is further fortified by the experience of other central banks that were not confronted with the problem of large foreign-owned short-term funds, but which succeeded in remaining on the gold standard for long periods without frequent corrective adjustments in the discount rate.

The importance of powerful spontaneous correctives in a successful gold standard world. One of the most serious criticisms made of the international gold standard is the necessity for gold to move and for corrective changes in discount rates to occur in order that correctives for disequilibria may be forthcoming. Such changes clearly involve changes in business activity, prices, and employment. In a world become sensitive to the great importance of economic stability, an international financial system that relies for its operation upon frequent reversals in the direction of business activity seems intolerable. It is argued that

price on standard gold bars and foreign coin, the Bank increased the cost of gold export. The maximum recorded price charged by the Bank for standard gold bars was £3 18s. 1d. per ounce on sales made in November, 1892, and September, 1906. (Sayers, R. S., *Bank of England Operations, 1890-1914*, London, P. S. King & Son, Ltd., 1936, p. 82.)

in such a system, gold movements must be permitted to exercise their full effect upon the volume of credit and currency. Thus, the export of gold must lead to a reduction in credit and currency by an amount equal to the appropriate multiple set by banking reserve ratios. The import of gold must be followed by a corresponding multiple expansion of credit and currency. The rules of the gold standard game must be adhered to lest the whole system collapse. Offsetting, stabilizing, and gold-sterilizing activities of central banks cannot be tolerated if the gold standard is to work.

The existence of powerful spontaneous correctives, however, changes the picture greatly. No longer need it be argued that the restoration of equilibrium, once it has been disturbed, requires gold movements and multiple changes in the volume of currency and credit based upon the gold. To a very considerable extent we may expect that the transfer of purchasing power, part of which may arise directly out of gold movements, provides powerful correctives. To the extent that this is so, multiple credit expansion upon the basis of gold imports is not only unnecessary but also undesirable. Some absorption of gold imports by the central bank in order to prevent such multiple credit expansion need no longer be considered a sin against the gold standard but a positive virtue. In other words, not all actions of central banks in the interest of internal stability need be considered directly in conflict with the international gold standard.¹⁰

Heavy Unilateral Capital Transfers

Despite the undoubted existence of spontaneous forces tending to maintain equilibrium without large gold movements, it is not likely that heavy unilateral capital transfers, such as reparations payments and long-continued foreign lending, can be accomplished without some shift in gold. This shift will cause or at least permit such an adjustment in the credit, price, and cost structures of the countries involved as is necessary for the establishment of equilibrium in the balance of payments of each. Likewise, countries producing gold for export tend to have an internal price level high enough, relative to the outside world, to enable them to have an import surplus equal to the value of the exported gold.

The case of Canada's foreign borrowing, 1900-1913. Canada, which was a fairly continuous and heavy borrower from abroad

¹⁰ Cf. Whale, P. B., "The Working of the Pre-War Gold Standard," *Economica*, February, 1937.

between 1900 and 1913, provides a good example of the transfer of capital that requires fundamental adjustments to maintain equilibrium. We are indebted to Professor Viner's study of this episode in Canadian history for information as to the developments that accompanied the capital transfer.¹¹ During this period, Canada borrowed approximately 2½ billion dollars, of which about 1½ billion dollars represented a net capital inflow, while the remainder was used to pay the mounting interest charges on pre-existing foreign indebtedness. This transfer of capital was accompanied by an expansion in the volume of Canadian bank notes and deposits, resulting from the sale of foreign exchange bills to Canadian banks by borrowers seeking to realize on their borrowed funds. This was accompanied by a growth of the foreign exchange held in London and New York by the Canadian banks. Later, as occasion arose, the Canadian banks converted part of their foreign exchange holdings into gold. Except toward the end of the period, there was little evidence that the Canadian banks used their newly acquired cash resources as a basis of multiple credit expansion. The bulk of the transfer of capital into Canada was therefore accomplished by means of the direct transfer of purchasing power arising out of the borrowings abroad.¹² This fact seems to support the view that multiple expansion of bank credit upon the basis of newly acquired gold is not needed to effect a transfer of goods required to re-establish equilibrium.

The movement of prices in Canada during the period, shown in Table 66, indicates clearly the manner in which the net commodity imports were induced. During the period, Canadian import prices rose more slowly than did domestic and general wholesale prices, while export prices rose slightly more than did general wholesale prices but remained below domestic prices.

Incidentally, the Canadian experience shows something of the roundabout nature of international capital movements. Although two-thirds of the Canadian borrowing was from England, as compared with one-third from the United States, Canada's trade (commodity) balance with England remained favorable because of the rise in grain exports with the settlement of the West. On the other hand, most of the excess of Canadian commodity imports, representing the net capital inflow, came from the United States.

¹¹ Viner, Jacob, *Canada's Balance of International Indebtedness, 1900-1913*, Cambridge, Harvard University Press, 1924.

¹² Cf. Viner, Jacob, *Studies in the Theory of International Trade*, p. 413.

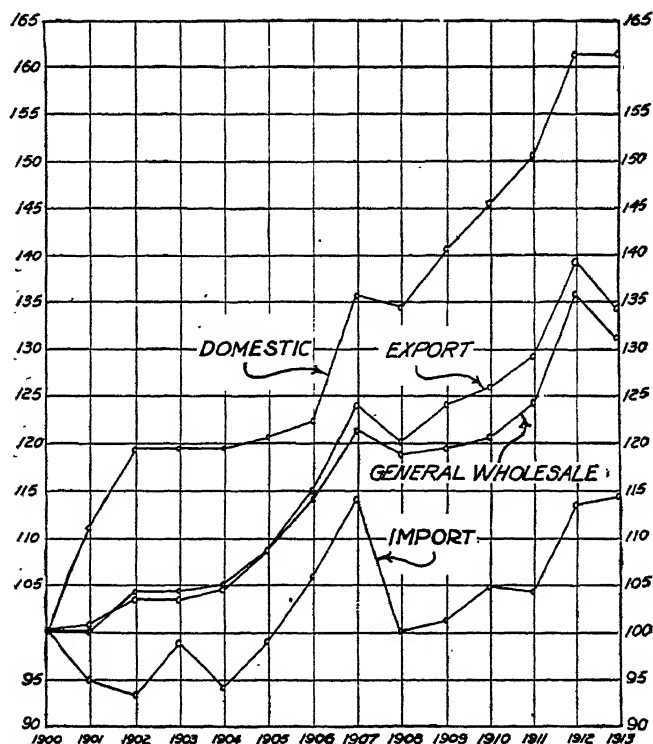


CHART 31. PRICE MOVEMENTS IN CANADA, 1900-1913.

TABLE 66

PRICES IN CANADA, 1900-1913* (1900 = 100)

Year	General Wholesale Prices	Domestic Prices	Import Prices	Export Prices
1900	100	100	100	100
1901	100	112	95	101
1902	104	119	93	103
1903	104	119	98	103
1904	105	119	94	104
1905	108	121	98	108
1906	114	123	107	115
1907	122	136	114	124
1908	118	134	100	120
1909	119	141	102	124
1910	121	146	105	126
1911	124	151	104	129
1912	136	162	113	139
1913	132	162	114	134

* James W. Angell, *The Theory of International Prices*, 1926, p. 510. Reprinted by permission of the President and Fellows of Harvard College.

The necessary causal sequence resulting in international capital movements. A difference of opinion exists as to the proper and necessary sequence of events which lead to a net unilateral capital transfer of any magnitude. The classical theory of international trade stresses the manner in which the appearance of net foreign lending leads to the development of the appropriate volume of net commodity exports needed to effect the capital transfer. Gold movements, price adjustments, and transfer of purchasing power combine to accomplish the desired results. A different view, however, is held by those who believe that foreign lending (or other unilateral transfers) can be carried through successfully only when the lender has already developed a favorable balance of payments sufficient to provide foreign claims equal to the transfer.¹³ This viewpoint is ably presented in the quotation which follows:¹⁴

If a country has a favorable balance of payments on current account its nationals can lend abroad to the extent of this favorable balance without causing any drain upon its gold reserve. If, however, it has no favorable balance on current account, or if its nationals in fact lend abroad to an extent larger than its favorable balance, its gold reserve will be depleted. Within reasonable limits and for a reasonable time there may be no objection to this. It may indeed happen that a country possessing an exceptionally heavy gold reserve may be positively anxious to see it reduced to smaller dimensions. In such circumstances it will welcome a tendency for its nationals to lend abroad to an extent greater than its favorable balance on current account. But a persistent outflow of gold would be unwelcome to a country whose gold reserve is already no larger than it desires normally to retain. To avoid such a persistent outflow it is essential that its net foreign lendings should be kept within the limits of its favorable balance of payments on current account. This is what is meant by the common dictum that a country's capacity to lend abroad is limited by its export surplus.

The position taken by the writers of the report from which the above quotation is made resembles rather closely that of Continental economists, who generally refuse to accept the classical theory of international trade. Their reasons for taking this position, however, are somewhat different. The Continental economists hold that automatic corrections in the balance of payments do not necessarily follow disturbances to equilibrium. Therefore, outside controls must be imposed upon the transactions entering the balance of payments in order that equilibrium

¹³ See Viner's discussion of the Keynes-Ohlin controversy on the question of the transfer of Reparations payments in *Studies in the Theory of International Trade*, pp. 307-311.

¹⁴ *The Problem of International Investment*, a report by a study group of members of the Royal Institute of International Affairs, 1937, p. 55.

may be maintained.¹⁵ The writers of the report just quoted accept the possibility that an adjustment may be reached but fear that it will take the form of gold exports, tighter money rates, depression, and a decline in imports instead of an expansion in exports.

¹⁵ Angell, *The Theory of International Prices*, pp. 368-369, 399.

CHAPTER XXXIX

INTERNATIONAL PRICE RELATIONSHIPS UNDER INCONVERTIBLE PAPER CURRENCIES

IN THE preceding chapters we have examined the conditions necessary for international equilibrium under the gold standard. When the several currencies are convertible into a given quantity of gold, the rates of exchange are rigidly held within the narrow limits of the gold points. Disequilibria in the balance of payments must be corrected by adjustments in the internal price and cost structures.

The maintenance of equilibrium with pure paper currencies. When inconvertible paper currencies are used, the equilibrium in the balance of payments may be restored and maintained by changes in foreign exchange rates, changes in prices, or both. Unlike the gold standard, pure paper currencies provide no gold points. Under pure paper currencies, therefore, the rates of exchange may vary widely in response to the changing forces of supply and demand. For example, if a country on a pure paper standard were to have an unfavorable debt balance, the price of foreign exchange would rise as under the gold standard. But whereas under the gold standard a limit to the increase in foreign exchange rates is set at the gold export point, under inconvertible paper no such limit exists. Instead, an unfavorable debt balance in a country using inconvertible paper currency must cause such a rise in foreign exchange rates that the supply of foreign bills will equal the demand for them.

Before going further, it is necessary to recall that although an approximate equilibrium in a country's balance of payments for such a period as a year's time may easily come about, such an equilibrium cannot be expected for any given day or even for any single season. Obvious difficulties would accompany any attempt to equalize the basic debit and credit items in the bal-

ance of payments for a short period. For example, American exports of agricultural products have tended to be concentrated largely in the autumn and early winter. During this season the balance of payments is favorable, while it becomes unfavorable during other seasons when an excess of imports appears. Under the gold standard, no consequences attach to these seasonal disturbances to the balance of payments so long as they eventually cancel out. The day-by-day and the seasonal inequalities between debit and credit items are smoothly cared for by the movement of short-term capital. Such capital moves from the creditor to the debtor country in response to small changes in discount rates or, regardless of discount rate changes, to obtain a profit by buying foreign exchange cheap and selling it dear. But with inconvertible paper currencies, much less opportunity exists to offset short-term and seasonal inequalities in debits and credits in the balance of payments. Dealers in foreign exchange who would quickly transfer short-term capital to fill the gap under the gold standard will be much more reluctant to take such a step under inconvertible paper currencies because of the other forces which may cause entirely unpredictable fluctuations in the exchange rates. The purchase of foreign exchange when a current favorable balance makes it cheap involves vastly greater hazards when currencies are inconvertible paper than when the gold standard provides a point of certain reference in the form of gold parities. Under pure paper currencies, therefore, an equality in the balance of payments during a season when exports normally exceed imports requires a fall in the foreign exchange rate until one of two results occurs. First, the rate may decline to a point where speculative purchases of foreign exchange will become numerous enough to take off the market the excess supply of foreign bills. Second, if speculative buyers do not appear in sufficient numbers to absorb the supply, the foreign exchange rate must fall until exports are reduced and imports increased to the point of equality. It follows, therefore, that regardless of the existence of equilibrium in the annual balance of payments, inconvertible paper currency requires marked seasonal and daily fluctuations in exchange rates to provide the necessary short-run equilibrium.¹ This in part explains the need for stabilization fund operations by government agencies to provide short-run exchange stability for paper currencies.

¹ Cf. Keynes, J. M., *Monetary Reform*, New York, Harcourt, Brace & Co., 1924, pp. 116-125.

Over a period of time sufficient to average out seasonal and irregular fluctuations, exchange rates between paper standard countries must adjust themselves so as to provide equilibrium in the balance of payments of each. An unfavorable balance of payments causes foreign exchange rates to rise appropriately, while a favorable balance causes them to fall. A rise in foreign exchange rates has the effect on foreign importers of lowering the general level of domestic prices while increasing the cost of imported goods. For example, if the exchange rate between the inconvertible pound and dollar were $\text{£}1 = \$5$, and at this rate American imports rise and exports fall off, it is evidence that American prices are too high. Let us suppose that the excess of American imports forces the dollar value of the pound to rise to $\$6$. British importers now find that $\text{£}1$ will buy $\$6$ worth of American goods instead of $\$5$ worth. In effect, therefore, American goods have become cheaper in terms of pounds. A fall in foreign exchange rates, on the other hand, increases the price of goods to foreign importers, while it lowers the cost of imports from abroad.

When the exchange rate between paper standard countries is not one that provides equilibrium in the balance of payments, two results may occur. First, as we have already noted, the rate of exchange may shift to a point which satisfies the requirements of equilibrium. Second, internal prices within the countries concerned may move to levels which provide equilibrium at the ruling exchange rates. Because of their flexibility under paper standards, exchange rates are more likely to make the adjustment than are the price levels. Further, one of the advantages commonly advanced for inconvertible paper currencies and free exchange rates is the ease and rapidity with which exchange rates can adjust themselves to restore equilibrium in the balance of payments once it is disturbed. This is in marked contrast to the slow and sometimes painful adjustments of cost and price levels required under the gold standard.

Purchasing Power Parity Theory of Exchange Rates

We have already seen that under pure paper currencies there is some equilibrium rate of exchange that tends to maintain a balance of payments between the countries involved. From our analysis it clearly appeared that this rate is one that equalizes the various import and export transactions in the light of the ruling price levels. It naturally follows that some attempt should be made to explain this equilibrium rate of exchange in

terms of the levels of prices. The *purchasing power parity* theory of exchange rates is an attempt specifically to relate the rate of exchange to the price level.²

The argument upon which the purchasing power parity theory rests is the very sensible one that people primarily want foreign money because of the purchasing power which it has in that foreign country over commodities, services, and so forth. When one offers his own money in exchange for foreign currencies, he is offering to give up buying power over commodities at home in exchange for buying power over things abroad. Therefore, one's valuation of foreign currencies in terms of one's own primarily rests upon the relative purchasing power of each currency in its own country.³ This leads to the obvious conclusion that the rate of exchange depends upon the relative price levels and may be expected to vary with changes in these price levels.

The calculation of purchasing power parity exchange rates. The true normal or equilibrium exchange rate between countries cannot be calculated directly by comparing the buying power of a unit of domestic currency over a representative list of commodities and services with the buying power of a unit of foreign currency over a similar list. To calculate the importance or value of a unit of foreign currency for buying foreign goods to be brought back to one's own country, one must allow for all the costs of transferring the goods, such as import duties, freight, and other shipping expenses. These costs differ from commodity to commodity, and appropriate allowances for these costs would be next to impossible to make. Of still greater importance is the fact that most commodities move in but one direction, so that a comparison of prices of any given group in the two countries would have little significance. Prices of commodities exported from the United States to England must have a price in England, calculated at the ruling rate of exchange, sufficiently above the price here to pay the costs of transfer. The same rule applies to prices of goods moving from England to the United States. The purchasing power parity rate, if it be considered an equilibrium

² Professor Gustav Cassel is mainly responsible for the development and exposition of this theory in present-day economic literature. For a statement of his view, see his *Money and Foreign Exchange After 1914*, New York, The Macmillan Co., 1922, pp. 137-162.

³ Cf. Cassel, *op. cit.*, pp. 138-139. For criticisms of the purchasing power parity theory, see Haberler, Gottfried von, *International Trade*, New York, The Macmillan Co., 1936, p. 32; Jacob Viner, *Studies in the Theory of International Trade*, New York, Harper & Bros., 1937, pp. 379-387; and Howard Ellis, *German Monetary Theory 1905-1933*, Cambridge, Harvard University Press, 1934, Part III.

rate of exchange, is merely one at which the *total value* of everything bought from the rest of the world by the United States is equal to the *total value* of everything sold to the rest of the world. The money value of any particular bill of goods at home and abroad cannot possibly give a valuable clue to the equilibrium exchange rate.

Gustav Cassel, a leading proponent of the theory, attempts to calculate the purchasing power parity rate indirectly. He assumes that during some normal period, usually after the gold standard has been in operation for a time, the rate of exchange actually ruling is the purchasing power parity rate for the price levels that exist in the countries involved. For example, before the First World War, mint par of exchange between England and the United States was £1 = \$4.86, a rate which may be taken as the purchasing power parity for the ruling price levels. After the gold standard was abandoned, if the price level in England had doubled while that of the United States had remained unchanged, the relative purchasing power of the pound would have declined by one-half, and the rate of exchange, purchasing power parity, would then stand at £1 = \$2.43. To calculate purchasing power parity, therefore, the price levels for the normal period should be taken as a base (that is, 1913 = 100 in each country). The rate of exchange in this normal period is multiplied by the ratio of the price indexes for each country at the date for which the new equilibrium rate of exchange is to be calculated, and the result is the purchasing power parity rate. Thus, to use our previous example, if the old rate of exchange in 1913 was $\frac{\text{£1}}{\text{\$4.86}}$ and the ratio of prices in the two countries has

become $\frac{200}{100}$, purchasing power parity would be $\frac{\text{£1}}{\text{\$4.86}} \times \frac{200}{100}$, or $\frac{\text{£1}}{\text{\$2.43}}$.

Criticisms of Cassel's method. Although Cassel's method for estimating purchasing power parity is obviously a handy scheme for obtaining a general idea of the equilibrium rate, its accuracy may be seriously questioned. Objection to this method of calculation may be made on several grounds.

1. Price indexes upon which the calculation is based must be representative of costs and prices of things that move in international trade. For this reason, indexes of wholesale prices seem more suitable than general price indexes. But a good deal of dis-

person among individual price movements accompanies changes in average wholesale prices, and there is no way of knowing the extent to which prices of particular goods entering foreign trade move in harmony with the general average. To the extent that costs and prices of goods that are important in foreign trade move differently from the average shown by the index, the calculated results are invalid. For example, let us suppose cotton to be the principal export of country *A*, in which the index of general prices has risen 20 per cent. If new and more economical methods of growing cotton have been developed during the period, cotton prices might remain stable in the face of increases in other prices. A calculation of purchasing power parity based upon the general price index would "undervalue" or place too low a foreign exchange value upon the currency of country *A*; for so long as the price of cotton, the principal export, is unchanged, the foreign exchange value of country *A*'s currency will be unchanged. Furthermore, the relative importance, and therefore the weights, of different commodities included in the domestic price index may be quite different from their relative importance in foreign trade.

2. The method of calculation proposed by Cassel is based upon the old rate of exchange, which is assumed to be normal for the base-year price levels. But the correctness of this exchange rate is dependent upon conditions existing at the time in respect to the type and relative amounts of the commodities moving in international trade. During the interval of time between the base year and the year for which the calculation is made, marked changes in the types of such commodities are likely to occur. New products appear, tastes change, and competition from other countries may seriously modify the terms of trade. Especially is this objection a serious one when the base year is remote. Moreover, if the cost of transfer between countries has changed between the base year and the calculated year, the calculation will be inaccurate.

3. The exchange rate for the base year, assumed to be the equilibrium rate, was one that permitted a favorable trade or merchandise balance for capital-exporting countries. Any substantial change in the nature of international capital movements, therefore, would lessen the validity of the calculated rate. For instance, during the period 1924-1928, the annual net export of long-term capital by the United States averaged about \$650,000,000. In 1930 it had declined to \$290,000,000. The ruling exchange rate during the 1924-1928 period must have been roughly equal to purchasing power parity, taking into account

the annual export of a substantial amount of long-term capital as represented by our net security purchases from abroad. Unless offset by an increase in export of short-term capital, the sudden decline in our long-term foreign lending in 1930 required as an offset an increase in imports or a decline in exports. Unless prices in the United States increased relatively, foreign exchange rates would have to fall if the rate of exchange is to become true purchasing power parity under the changed conditions of American long-term foreign lending.

The price index best suited for calculating purchasing power parity. In spite of the above difficulties that accompany attempts to calculate the equilibrium or purchasing power parity rate of exchange between paper standard countries, there are times when such a calculation may be of practical value. In times of unstable and fluctuating exchange rates, it provides a rough measure of the extent to which the actual rate deviates from the equilibrium rate. It provides a guide to stabilization efforts when the problem of exchange stabilization arises. The price index that will provide the best possible basis for calculating the equilibrium rate is, therefore, a proper subject for inquiry.

There are some who advocate the calculation of purchasing power parity solely upon the basis of prices of commodities which actually move in international trade. But such a calculation would be of little value. With any given rate of exchange, the market prices of commodities that move freely in international trade differ in the several markets by no more than the cost of transferring or shipping them from one place to another. With allowance for the time involved in arbitrage transactions by traders, the relative prices of such goods in different countries must always reflect the existing rate of exchange. Therefore, a calculation based upon index numbers of prices of these goods alone must always show that the ruling rate of exchange is the true equilibrium rate. Such a calculation is further invalidated by the fact that changes in the relative prices would not necessarily cause *proportional* changes in the equilibrium rate of exchange, because other goods previously unable to move in international trade would begin to do so.⁴

The ideal price index for calculating the purchasing power parity rate of exchange is one comprised of the prices of the factors of production involved in the making of goods actually entering or on the margin of entering international trade. The

⁴ Cf. Keynes, *Monetary Reform*, pp. 100, 382-383.

value of such an index of prices rests upon the fact that the consideration which in the last analysis determines whether or not a commodity will move in international trade is the cost of production at home, including transfer costs, compared to its price abroad calculated at the current rate of exchange. If the price realized on exports is less than the price of their factors of production, exports will shrink. If the price realized on exports is greater than the price of the factors involved in their production, exports will expand. If, therefore, at the ruling rate of exchange exports so languish that they are less than imports and a country experiences an unfavorable balance of payments, the domestic currency is said to be "overvalued" in the foreign exchange markets. Foreign exchange rates are too low and must rise to provide an equilibrium. On the other hand, if at the ruling rates of exchange exports flourish and so outrun imports as to provide a country with a favorable balance of payments, the domestic currency is "undervalued" in the foreign exchange markets, and foreign exchange rates must fall to provide equilibrium.

It is quite impossible, however, to procure an index of "efficiency wages" of the factors of production used in each country to produce commodities that move in international trade. Indexes of the cost of living are sometimes used in the calculation of purchasing power parities in the belief that they reflect, more nearly than do wholesale price indexes, the changes in fundamental costs of production. Probably general wholesale commodity price indexes, however faulty for the purpose, provide the most practical basis available for calculating purchasing power parity.

Deviations from the true equilibrium exchange rate. Disturbances in the balance of payments occurring under the gold standard are evidence that the actual rate of exchange is not the true equilibrium rate. Such a situation calls for a correction in the cost and price structures of the countries involved. Similar disturbances occur under inconvertible paper currencies. The forces that commonly create disequilibrium in the balance of payments of a paper standard country include the following: (1) changes in the level of prices relative to prices abroad; (2) changes in the demand for specific commodities moving in international trade; (3) changes in the costs of transferring goods from one country to another, particularly changes in import duties; (4) changes in the direction and magnitude of long-term capital movements and unilateral transfers, such as war indemnities; (5) short-term capital movements. Each of these forces

is a familiar cause of disequilibrium under the gold standard. One important difference exists, however, in the part played by short-term capital under the two standards. Unlike sound gold standard currencies, pure paper currencies are exposed to severe short-term capital movements of a speculative nature, which introduce highly unpredictable, uncontrollable, and violent disturbances in the balance of payments. For this reason, exchange rates under inconvertible paper currencies are likely to deviate sharply from the equilibrium rate much more than are exchange rates under the gold standard. A paper standard currency, therefore, may readily become either overvalued or undervalued in terms of foreign currencies, depending on whether its value is greater or less than what it should be at the true equilibrium rate.

TABLE 67

PERCENTAGE RATIO OF PURCHASING POWER PARITY TO THE ACTUAL EXCHANGE RATE
OF SELECTED EUROPEAN INCONVERTIBLE PAPER CURRENCIES IN TERMS
OF THE DOLLAR *

	<i>Sweden</i>	<i>Switzer- land</i>	<i>Nether- lands</i>	<i>Great Britain</i>	<i>France</i>	<i>Germany</i>
1919						
Jan. ....	...	...	...	90.7	60.1	148.2
April ....	...	...	...	95.7	69.3	208.4
July ....	...	...	...	95.9	81.5	224.4
Oct. ....	...	...	...	93.0	91.7	241.0
1920						
Jan.	88.2	...	86.3	107.0	108.8	260.4
April	80.7	...	90.9	96.9	128.6	222.8
July	78.3	...	93.6	101.5	115.3	165.6
Oct.	80.2	...	97.1	104.8	124.2	231.1
1921						
Jan.	78.2	87.9	97.6	95.3	125.4	175.6
April	70.5	79.3	97.3	92.1	113.7	168.8
July	83.3	92.0	100.1	101.6	105.5	180.8
Oct.	85.4	81.6	101.0	109.5	114.2	201.5
1922						
Jan.	81.9	77.5	92.8	101.9	103.9	173.1
April	83.7	85.7	93.0	99.8	95.1	154.3
July	92.3	95.2	98.0	108.1	111.7	180.0
Oct.	91.6	97.8	102.5	110.3	119.7	200.0
1923						
Jan.	95.3	91.5	101.0	106.6	116.5	190.6
April	95.0	90.2	104.6	105.9	110.8	181.6
July	93.6	91.8	106.7	109.1	121.6	160.3
Oct.	96.4	91.3	106.2	109.7	117.8	...

* Compiled from data appearing in Graham, *Exchange, Prices, and Production in Hyper-inflation: Germany, 1920-1923*, Princeton, N. J., Princeton University Press, 1930, pp. 118-120.

Corrections when the actual rate deviates from the true rate of exchange. Whenever a country's currency becomes "overvalued" in terms of foreign currencies, its exports tend to decline and its imports are stimulated. The opposite results arise from undervaluation. For example, let us assume that $\text{£}1 = \$5$ represents the true equilibrium rate, but that the actual rate stands at $\text{£}1 = \$4.60$. Whereas \$5 should be required to buy £1, it now takes but \$4.60. Pounds are therefore at a bargain (that is, are undervalued), while dollars are too dear (that is, are overvalued). Pressure in the United States to buy cheap pounds will tend to force up the price of pounds in terms of dollars, while reluctance in England to buy dollars will cheapen American currency. Whenever the actual rate deviates from the equilibrium rate of exchange, natural economic forces tend to bring a correction.

Whenever the rate of exchange is free to move toward the true equilibrium rate, prompt adjustment tends to occur through a change in the exchange rate and with but little effect upon the internal price structures. It is for this reason that the advocates of managed paper currencies contend that without the gold standard it becomes possible to regulate and control the internal price level of a particular country without reference to the behavior of prices abroad. But sometimes paper currency exchange rates are not merely the passive reflection of the respective price levels within the countries concerned. Instead, the forces operating against the exchange rates may be continuous and powerful enough to overcome the natural tendency of the rate to return to normal. Under such circumstances, the adjustment may come about by a change in the price levels. The persistence of the forces creating disequilibrium in the balance of payments has led some to believe that natural forces cannot be relied upon to maintain equilibrium. This belief is embodied in the "balance of payments" theory of exchange rates.

The Balance of Payments Theory of Exchange Rates

Purchasing power parity theory of exchange rates. We have already examined the theory that exchange rates under inconvertible paper currencies are determined by purchasing power parity or by the relative price levels in the countries concerned. If at any particular time the actual market rate of exchange deviates from the true equilibrium rate, the market rate tends to move in the direction of the equilibrium rate. The best calculation that can be made of the equilibrium rate is that based on the relative changes in internal price levels of the two countries.

A fall in the value of a country's currency in the foreign exchange market is therefore explained by a rise in that country's price level relative to prices abroad. Internal currency inflation, therefore, explains a fall in foreign exchange value of this currency. Since budgetary deficits tend to lead to inflation of prices, these deficits are associated with the depreciation of a country's currency on the foreign exchange markets. This explanation is closely related to the quantity theory of money. It is not surprising, therefore, that critics of the quantity theory reject purchasing power parity as an explanation of exchange rates.

The balance of payments theory. The balance of payments theory holds that foreign exchange rates are determined by independent factors not directly related to internal price levels and the quantity of money. Such independent factors tending to cause a rise in foreign exchange rates would include requirements for debt payments, reparations, and an inelastic demand for raw materials needed from abroad. Because they deny that there is any real inter-currency parity corresponding to purchasing power parity, the adherents of this theory reason that causes of changes in exchange rates lie within the forces determining the balance of payments rather than in the internal price levels. They hold that exchange rates reflect rather than influence the balance of payments. Because they deny that there is anything automatic about the maintenance of equilibrium in the balance of payments, they find ample justification for tariffs, quotas, exchange regulations, and other forms of state interference designed to prevent an unfavorable debt balance. This is in sharp contrast to the conventional quantity theory view that equilibrium is automatically re-established either by an adjustment of price levels if under the gold standard, or by an adjustment of exchange rates if off the gold standard.⁵

Closely allied with the balance of payments theory is the view held by some students of the acute postwar inflation experiences. They believe that exchange depreciation of those times originated in forces that operated directly against the exchange rates, and that this caused rising internal prices and an expansion in the

⁵ Cf. Angell, James W., *Theory of International Prices*, Cambridge, Harvard University Press, 1926, pp. 331-333 and Haberler, *International Trade*, p. 31. For a detailed examination of the "balance of payments" theories, see Ellis, *German Monetary Theory, 1906-1933*, Chapter XIV. Throughout the period of postwar inflation in Germany, the Reichsbank, the government, the bankers, the industrialists, and the press insisted that the depreciation of the mark was caused by the state of the balance of payments. Cf. Costantino Bresciani-Turroni, *The Economics of Inflation*, London, G. Allen & Unwin, 1937, pp. 42-46.

quantity of money. Thus, it has sometimes been held that the line of causation advanced by the quantity theorists was actually reversed.

*Interrelation of Prices and Exchange Rates
under Acute Postwar Inflation*

Postwar inflation in France. After the Armistice of 1918, prices in France, like those of the rest of the world, rose with the postwar boom and subsequently collapsed in 1920. Unlike England and the United States, France failed to balance its governmental budget after the war. Between 1924 and 1926, waning public confidence compelled the French Government to depend more and more upon inflationary borrowing at the Bank of France.⁶ As early as 1923, the value of the franc began to decline in the foreign exchange markets because of the appearance of speculative pressure. The collapse of the German mark in 1923 increased the fear for the security of other currencies. Receipts from reparations payments became more and more uncertain, while the inability of the government to balance its budget brought increased suspicion of the future of the franc. Anything like an exact estimate of the magnitude of the pressure placed upon the franc at this time by the speculative "flight" of capital can hardly be made. Indirect estimates, however, indicate that between 1923 and July, 1926, net capital exports from France must have been well over 25 billion francs.⁷

During the period of acute depreciation of the franc in 1926, the exchange value of the franc fell sharply. Imported goods prices rose, with no appreciable time lag, as the external value of the franc declined. Prices of domestic goods, however, lagged behind the fall in the exchange value of the franc by about one month.⁸ It appears, therefore, that speculative forces operated to drive down the exchange value of the franc, and that domestic prices rose somewhat later to restore equilibrium. Visual evi-

⁶ Cf. Rogers, J. H., *The Process of Inflation in France*, New York, Columbia University Press, 1929, pp. 50-63. The government was the most important borrower at the Bank of France, advances to the state amounting to between 60 and 70 per cent of the Bank's total note circulation. In December, 1925, over one-third of the government's floating debt, or 35,950,000,000 francs, consisted of advances by the Bank.

⁷ Dulles, Eleanor L., *The French Franc, 1914-1928*, New York, The Macmillan Co., 1929, pp. 32-36. Miss Dulles' estimates are based upon the volume of the return flow of funds to France after *de facto* stabilization had been achieved in 1926.

⁸ Rogers, *op. cit.*, pp. 122-123.

dence of the sequence of exchange, price, and currency movements in France is presented in Chart 32. The experience of France seems to support the balance of payments theory of the exchange rates so far as acute inflation is concerned.

The relation between the exchange rate and the price level in postwar Germany.⁹ At the end of the World War in 1918, Germany's financial position was not greatly different from that of the other principal warring countries. Prices had risen to about

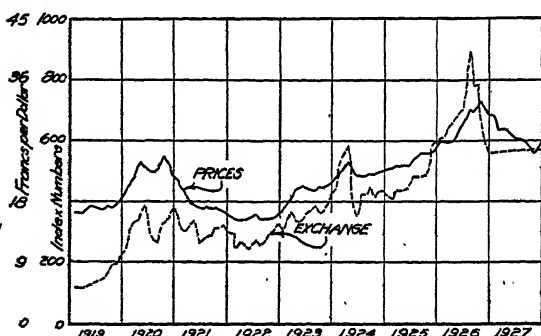


CHART 32. MOVEMENTS OF PRICES OF DOMESTIC GOODS AND DOLLAR EXCHANGE RATES IN FRANCE, 1919-1927. Reprinted from Rogers, James Harvey, *Process of Inflation in France*, p. 104, by permission of Columbia University Press.

two and one-half times the prewar level. Toward currency inflation and budgetary deficits both the government and the Reichsbank assumed a complacent attitude. Because its credit was weak, the government turned to the Reichsbank for loans. In May, 1921, the reparations were fixed at the astronomical figure of 132,000,000,000 gold marks (about 33,000,000,000 pre-devaluation gold dollars), and included large demands for immediate cash payments. This event destroyed the remaining credit of the German Government and resulted in heavy pressure upon the exchange value of the mark. The heavy cash reparations payments, at a time when Germany had no adequate favorable balance of payments, could only be met by borrowing abroad or by offering marks in the foreign exchange markets in return for foreign funds. Because borrowing abroad was impossible on a sufficiently large scale at that time, the government followed the alternative method of selling marks for foreign ex-

⁹ For an exhaustive study of the German experience, see F. W. Graham's *Exchange, Prices and Production in Hyper-Inflation, 1920-1923, 1930*.

change. This meant a sharp depreciation in the exchange value of the mark.

Foreign purchasers of German marks were of two sorts. First, the cheapening of the mark made it profitable to buy marks for use in purchasing German goods. Owing to the reparations pressure, the mark became "undervalued" in the foreign exchange markets, and therefore offered a good bargain to traders. Second, speculators were willing to buy marks to hold in the expectation that they would some time rise to a higher value. Each new low quotation of the mark led some buyers to believe that the mark could fall no lower but must necessarily rise. New buyers for the depreciating mark therefore constantly appeared.

Purchasers of depreciated marks for purely trading purposes were not sufficiently numerous to give substantial support to the market. The supply of exportable goods in Germany was insufficient to permit the development of an export balance large enough to meet the heavy reparations requirements. Prices of exportable goods moved up sharply, aided by governmental action in some instances, and reduced the profits to be derived from spending marks for export purposes. In addition, the government prohibited altogether the export of certain types of materials. The dependence upon speculative support for the foreign exchange value of the mark is illustrated by the fact that during the occupation of the Ruhr by the Allied forces in January, 1923, the mark temporarily dropped to one-seventh of its value at the beginning of the month.

The depreciation of the mark affected the prices of both exported and imported commodities. The prices of domestic goods followed the rise in the prices of imports and exports. The rising price level raised the costs of the governmental operations so that lagging tax incomes meant an increased budgetary deficit for purely domestic governmental expenses. The inflation arising from governmental borrowing at the Reichsbank was further supported by a rapid expansion of private borrowing for business purposes.

The sequence of events in Germany may be seen in Charts 33 and 34, and may be summarized as follows:¹⁰

¹⁰ Rogers, *op. cit.*, p. 155.

Austria underwent an experience in 1921-1922 similar to the experiences of France and Germany. For a study of Austria's postwar inflation, see Walré de Bordes, J. van, *The Austrian Crown*, London, P. S. King & Son, 1924.

1. The movements of dollar exchange rates in general preceded the movement of prices during the period of acute inflation. Before acute inflation set in, price movements preceded changes in exchange rates.

2. The adjustment between exchange rates and prices was much more rapid when price movements preceded exchange

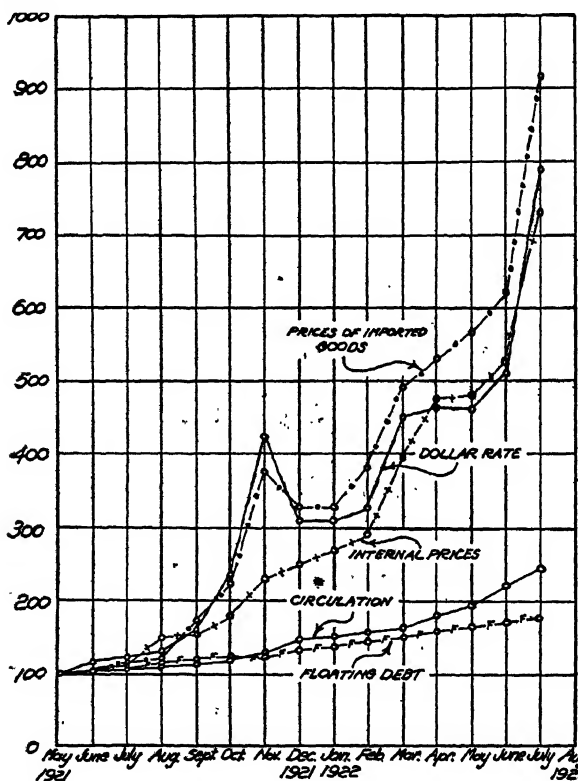


CHART 33. MOVEMENTS OF INDEX NUMBERS OF PRICES, MONEY IN CIRCULATION, AND DOLLAR EXCHANGE RATES IN GERMANY, MAY, 1921-JULY, 1922. Based on data given by Costantino Bresciani-Turroni in *The Economics of Inflation*, p. 33.

movements than when the exchange rates preceded the movement of prices.

3. In the later acute stage of inflation, the lags between exchange rates and prices very largely disappeared. This seems to have been due to the practice of marking up internal prices immediately when foreign exchange rates increased. This practice arose out of an attempt so far as possible to avoid losses due to increased costs of replenishing depleted inventories.

4. As in France, the movement of prices in Germany generally preceded changes in circulation definitely and by a considerable interval. But in the final stages, in both Germany and France, lags were largely eliminated.

Conclusions regarding the relation between exchange depreciation and internal prices during periods of acute inflation. The

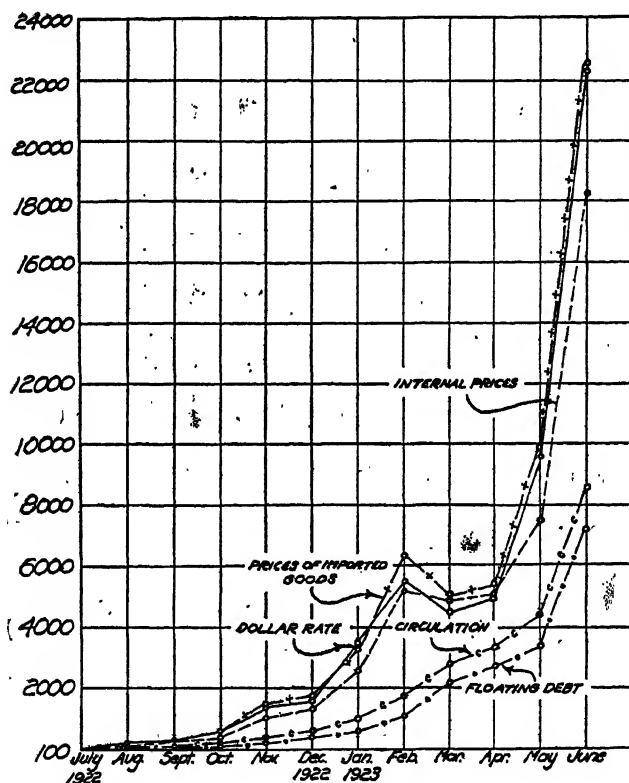


CHART 34. MOVEMENTS OF INDEX NUMBERS OF PRICES, MONEY IN CIRCULATION, AND DOLLAR EXCHANGE RATES IN GERMANY, JULY, 1922-JUNE, 1923. Based on data given by Costantino Bresciani-Turroni in *The Economics of Inflation*, p. 35.

purchasing power parity theory leads one to expect that the sequence of events during inflation should be (1) internal currency inflation with rising domestic prices and (2) depreciation of the currency on the foreign exchange markets. The available evidence indicates that this is substantially true when there is no abnormal pressure directed against the foreign exchange value of the currency under consideration. But in case a speculative flight from a currency develops, owing either to fear of radical

trends or to the expectation of continued inflation, foreign exchange rates may rise above purchasing power parity or the equilibrium rate. Similar results occurred in Germany under the pressure of reparations payments. Under such circumstances, foreign exchange rates rise ahead of and faster than domestic prices; moreover, currency circulation lags behind the exchange rates. It is easy to conclude, therefore, that such a sequence of events constitutes a refutation of the purchasing power parity theory, and that during periods of acute inflation, exchange rates dominate prices.¹¹

The explanation, however, is hardly so simple. In times of acute inflation, a complex set of circumstances contributes to the visible results of rising prices and rising foreign exchange rates. In Austria, Germany, and France, a sharp depreciation of their currencies on the foreign exchanges was accompanied by and to some extent caused by internal budgetary difficulties of unstable governments. The lack of either the will or the ability to balance their budgets resulted in an almost constant currency inflation and a rising internal price level. One cannot say, therefore, that because internal price inflation *followed* rather than *led* the depreciation of a currency on the foreign exchange market, exchange rates determined prices. Both were the result of a common pressure from unstable governments and internal threats of future inflation. Nevertheless, the depreciation of exchanges did precede domestic price inflation, and without question it did influence the movement of domestic prices. The reasons for this are not hard to see. The rise in foreign exchange rates increased the price of exportable goods and increased the cost of imports. To the extent that these goods entered into the calculation of the general price index, the index of the general price level tended to rise. But the general price level could not rise without an appropriate expansion in money expenditure. Either the volume of money had to rise, or its velocity had to increase. Otherwise, the rise in the prices of imports and exports would have been accompanied by a decline in the prices of other goods. During the periods under consideration, there was an increase both in velocity and in the volume of money within the countries that suffered exchange depreciation. Budgetary deficits and business borrowing, stimulated by inflationary price movements, provided the monetary basis for the price inflation that accom-

¹¹ Cf. Dulles, *The French Franc, 1914-1928*, pp. 285-286; and Rogers, *The Process of Inflation in France*, p. 246.

panied the rise in foreign exchange rates.¹² When exchange stabilization was subsequently attempted, freedom from internal inflation arising from budgetary deficits became a necessity. For example, it is by no means certain that had Germany been able politically and economically to collect taxes in sufficient amounts to meet reparations payments, attempts to transfer such payments to the Allies would have inflated the German price level. On the contrary, as the prices of import and export commodities rose in response to the rise in foreign exchange rates, other prices within Germany would have fallen so long as monetary inflation did not accompany the transfer. This is not to say that the actual amount of reparations demanded could have been transferred, but merely that the process of transfer need not, by depressing the exchange value of the mark, have resulted in internal price inflation. The latter was the result of and was dependent upon the constantly increasing stream of currency arising from budgetary deficits.

¹² For a careful analysis of this problem, see Graham's *Exchange, Prices, and Production in Hyper-Inflation: Germany, 1920-1923*, Chapters IV, V, and VI. Also see Bresciani-Turroni's *Economics of Inflation*, Chapter III.

CHAPTER XL

CONTROLLED EXCHANGE RATES

Control under the gold standard. At first sight, foreign exchange rates appear to be determined simply by the law of supply and demand, without the use of artificial controls. Especially does this appear to have been true in times when the international gold standard was in operation. As a matter of fact, however, a considerable degree of control over exchange rates, or the forces determining them, has existed under the gold standard. For example, one well-established principle of central bank management under the gold standard has been the control of credit and interest rates so as to keep exchange rates within the gold points. We have already had occasion to examine the practices of the Bank of England in this respect. By a change in the discount rates it was able to attract short-term capital, to discourage long-term lending abroad, and to check internal credit expansion at times when an unfavorable balance of payments threatened the country's gold reserves. A raising of the gold points by modifying the terms upon which it bought and sold gold was also used as a means to prevent gold movements.

An even more positive and conscious control over the forces determining the exchange rates developed during the 1920's, when European countries were re-establishing the gold standard. The monetary uncertainty of the times made it inadvisable to rely too far upon the automatic action of the gold standard to protect gold reserves. Special measures were therefore taken to guard against contingencies that might lead to an unfavorable balance of payments. Careful avoidance of budgetary deficiencies gave assurance against internal inflation. Foreign credits were arranged to meet any adverse balances. Home industry and exports were encouraged, while central banks followed conservative credit policies.

The world-wide depression which began in 1929 and led to the financial collapse of 1931 saw the introduction of an extreme and

complex form of exchange control. This type of control is applied to rates of exchange in countries in which the gold standard is no longer effective.

*The Purpose of Exchange Control Under Inconvertible
Paper Currencies*

Since 1929 the world has been treated to the spectacle of a flood of ingenious and complex exchange controls such as has never before been seen. The purposes behind the different attempts to control foreign exchange rates are by no means identical. To understand the development of this movement toward control, we must examine the motives responsible for it.

Exchange control to maintain stable exchange rates with sterling. Countries have sometimes introduced control over foreign exchange rates in order to maintain stable relations with the currency of some foreign country with which they have important trade connections. This type of control was adopted by the countries in the Sterling Bloc after England abandoned the gold standard in 1931. The purpose of such control was to provide fixed exchange rates on London. The degree to which this was accomplished may be seen clearly in the parallel movement of the values of their currencies in terms of gold, as shown in Chart 1, on page 48. The mechanism of control used by these countries was the familiar one used in connection with the postwar gold exchange standard. The central bank of the country exercising exchange control bought and sold sterling bills at the established rate. The appearance of an excess supply of sterling bills was a signal for more lenient internal credit conditions, while a shortage of sterling bills and a decline in sterling balances in London indicated a need for domestic credit restriction. The connection between sterling and other currencies was a loose one. Sweden, for example, adopted a rate on London that was considered favorable at the time, but was prepared to allow the Swedish krona to rise in terms of sterling rather than undergo internal inflation.

Exchange control to stimulate exports. Exchange control has been instituted for the purpose of depressing the foreign exchange value of the country's currency in order to improve the competitive position of its export trade. It was not until the 1930's that deliberate currency devaluation became common. The depreciation of the Japanese yen provided an early example of this type of action which was later adopted in one form or other by a number of countries, including the United States.

Exchange control to provide short-run exchange stability. An important reason for the introduction of exchange controls is found in the desire to provide short-run stability in the exchange rates. Inconvertible paper currencies lack the automatic exchange stability provided by the gold standard. Particularly are they exposed to seasonal and speculative influences, which must be held in check if wide exchange fluctuations are to be avoided. Because short-run stability of exchange rates is important to foreign traders, countries using inconvertible paper currencies find it desirable to take measures to provide such stability. Such a purpose was behind the creation of the British Equalization Account and the American Stabilization Fund. Likewise the Tripartite Agreement of 1936 among the United States, England, and France was designed to set limits to exchange fluctuations, and represented an attempt to bring temporary exchange stability to a troubled world.

Exchange control to prevent capital exports. Exchange control is sometimes introduced to protect the exchange rate from the depressing effects of capital exports. Persons residing within the country may be denied the right to use foreign exchange for the purchase of foreign securities, foreign bank balances, or other foreign capital assets. Such control is commonly used to prevent or at least to minimize the flight of capital in the face of a threatened domestic crisis.

Blocking claims of foreign creditors. Exchange control sometimes takes the form of blocking off the claims of foreign creditors, who are then denied the privilege of transferring their claims for interest and debt payments to other countries. This is done to remove the pressure of these claims from the balance of payments and to avoid the depressing effect of such claims upon the value of the country's currency in the foreign exchange markets.

Official rates of exchange. Control measures have been adopted for the purpose of maintaining an established or official rate of exchange in the face of a relative rise in domestic prices as compared with prices abroad. The resulting overvaluation of the domestic currency in the foreign exchange markets discourages exports, stimulates imports, and leads to the imposition of tariffs and quotas and the establishment of clearing and barter agreements as the natural trade channels break down.

The Exchange Control Funds

The British Exchange Equalization Account. After England abandoned the gold standard in September, 1931, the pound de-

preciated rapidly in terms of the gold currencies. From \$4.86 it fell to about \$3.35 in December, 1931, or to 69.3 per cent of its gold parity. By April, 1932, speculative pressure had pushed the pound up again to \$3.74. To counteract such speculative movements and to stabilize the value of the pound, the British Government in April, 1932, established the Exchange Equalization Account. At the beginning, the Account consisted of £150,000,000 in Treasury bills (sometimes called "tap" bills). These bills could be readily converted into cash balances by sale in the British money market at the wish of the Bank of England, which managed the Account.

The primary purpose of establishing the Account was to stabilize the exchange value of the pound and to prevent either excessive depreciation or excessive appreciation.¹ The general panic which seized the financial world in 1931 brought waves of distrust upon first one currency and then another. As a result, short-term capital shifted rapidly from one money center to another, with consequent pressure upon exchange rates. Whenever a "flight" of capital to London occurred, the exchange value of the pound rose. But a dearer pound increased the difficulties of British exporters and could not be allowed to result from speculative movements of capital. The Account, therefore, stood ready to offset the effect of a flight of capital to London by freely selling pounds and taking foreign exchange instead. When the capital movement to London became pronounced, the Account came into possession of large amounts of foreign currencies, which were offset by an equal loss in pounds. On the other hand, when capital movements were away from London instead of toward it, the Account checked the fall in the exchange value of the pound by the purchase of pounds and the sale of the previously accumulated foreign exchange.

Since most of the funds acquired by the Equalization Account were in dollars, francs, and other Gold Bloc currencies, it could choose between holding the proceeds in the form of foreign exchange (balances in foreign countries) and converting them into gold. As a matter of fact, the Account did convert a very considerable amount of foreign exchange into gold, which was either

¹ That some have believed that the Account was used artificially to depress the value of sterling does not alter the fact that its most important function was to minimize exchange speculation. For assurances by an English writer that the Exchange Equalization Account was not used to depress the pound in the interests of British exporters, see Paul Einzig's *World Finance, 1935-1937*, New York, The Macmillan Co., 1937, p. 107.

earmarked in the foreign country or shipped back to London. In either event, the operations of the Account did not affect the volume of reserves in the British banking system but merely expanded the volume of its deposits. But at times the Account found its supply of available pound balances exhausted because of the limit set by law to the quantity of "tap" bills at its disposal, and it was then compelled to sell some of its gold holdings to the Bank of England to replenish its supply. When the Account made use of the funds acquired by the sale of gold to the Bank to overcome the buoyancy of the pound or to retire "tap" bills, the result was to add to the supply of bank reserves in the country.

When capital, seeking refuge abroad, was moving away from England, the Equalization Account stood ready to purchase pounds and sell foreign currencies. As the Account's foreign exchange supply became exhausted, it was necessary to export gold to replenish its foreign balances. Gold would be exported directly to the United States, or at times it was sold to the Bank of France and the francs converted into dollars through the foreign exchange market, with the burden of shipping gold to the United States falling on France. So long as the Account had on hand an adequate supply of free gold that it could export for this purpose, the British banking system suffered no shrinkage in bank reserves. But sometimes the losses of gold were so severe that the Account's free gold was exhausted and it was compelled to exchange for gold at the Bank of England some of the pound balances it had been acquiring in the support of the pound. The purchase of gold from the Bank diminished the reserves of the British banking system in a manner similar to the export of gold under the gold standard.

The original £150,000,000 made available to the Account was increased a year later to £350,000,000 and finally to £575,000,000.² This expansion in the volume of Treasury bills put at the disposal of the Account enabled it to prevent any marked appreciation in the exchange value of the pound in the face of tremendous movement of capital from the Gold Bloc countries to London. In March, 1938, the combined gold holdings of the Bank of England and the Exchange Equalization Account stood at £836,000,000. But attempts to support the pound during the pre-Munich crisis of 1938 cost the Account over £200,000,000 of its gold sup-

² After the outbreak of war in September, 1939, all previous limits on the size of the Account were removed. At the same time, the Account took over the gold holdings of the Bank of England.

ply. On January 6, 1939, with its gold supply almost gone, it repurchased £350,000,000 worth of gold from the Bank of England, paying for it in Treasury bills. This brought the Account's gold supply up to about £450,000,000.³

It was not the purpose of the Exchange Equalization Account to maintain the value of the pound at a level inconsistent with basic market conditions. In the face of changing price relationships between England and the outside world leading to a lower or higher equilibrium rate of exchange than that currently ruling, the market rate was permitted to adjust itself. Moreover, the Account did not always attempt to prevent some decline in the pound when heavy capital flight tended to force it lower. A glance at Chart 1, page 48, will reveal that the value of the pound in terms of gold currencies was by no means constant after the Account was in operation.

When war began in September, 1939, stronger measures for the control of foreign exchange rates were required. There was instituted at that time direct exchange control which took the form of the prohibition of the export of capital, the licensing of exchange dealers through whom all transactions had to pass, and an official exchange rate between the pound and other currencies. The Exchange Equalization Account has therefore lost, for the time being at least, its original function in respect to the control of exchange rates.

The American Stabilization Fund. From the profit resulting from the devaluation of the dollar in 1934, the sum of \$2,000,000,000 was set aside to form a Stabilization Fund. The Fund was patterned somewhat after the British Exchange Equalization Account. The most significant function of the Stabilization Fund has been to absorb a part of our already excessive gold supply. The sum of \$200,000,000 has been deposited by the Fund in the Federal Reserve Bank of New York and used as an active account through which all of the Fund's operations have been conducted. Ever since the establishment of the Stabilization Fund, the Treasury has bought and sold gold for exchange purposes. It follows, therefore, that there has been little occa-

³ *New York Times*, January 7, 1939. For a discussion of the action taken at that time to defend the pound's exchange value, see Paul Einzig's *World Finance, 1938-1939*, New York, The Macmillan Co., 1939, Part XII. It was at this time that the Bank of England departed from its custom of evaluating its gold supply at the statutory price of 85 shillings per fine ounce and instead used the current market price. In its return for the first week in March, 1939, it valued its gold at 145s. 5d. per fine ounce. *New York Times*, March 6, 1939.

sion for the use of the Fund for the purpose of influencing foreign exchange rates. The dollar with a *de facto* fixed gold value must necessarily vary in terms of foreign currencies mainly with variations in the price of gold abroad. Naturally enough, the United States Treasury has not seen fit to assume the risks of engaging in any heavy purchases of foreign exchange for the purpose of supporting the value of foreign currencies. It has, therefore, confined itself mainly to the minor role of secret agent for the import and export of gold. When, for example, the British Exchange Equalization Account sent heavy gold shipments to the United States to obtain dollars in support of the pound, the Stabilization Fund acted as agent in converting the gold into dollar credits. The Fund exchanged such gold for gold certificates, which it deposited in the reserve banks to obtain the required dollars. Likewise, at times when gold movements to the United States were too slow to meet the pressure of capital flight, owing to shortage of shipping facilities, prohibitive insurance rates, and the like, it is probable that the Fund went into the exchange market and purchased foreign currencies for dollars to prevent an undue break in the exchange rates.⁴

The Tripartite Agreement. The speculative pressure upon exchange rates continued during 1935 and 1936. After the pound had been cut loose from gold in September, 1931, sterling exchange depreciated to approximately 60 per cent of its original gold value. The devaluation of the dollar, culminating in the Presidential proclamation on January 31, 1934, fixing the weight of the dollar at 59.06 per cent of its old gold value, resulted in a similar depreciation of the dollar in terms of the Gold Bloc currencies. The exchange values of the currencies of numerous other countries were also permitted to fall. On the European Continent, however, France, Belgium, the Netherlands, and Switzerland persisted in maintaining their currencies at their old gold parities. The result was an overvaluation of the currencies of these Gold Bloc countries and heavy pressure on their price levels and export trade. The common belief that sooner or later they must necessarily follow the practice of other countries in cutting the gold content of their currencies resulted in persistent though intermittent capital flight, which proved to be a serious source of trouble.

Belgium weakened in the face of the pressure and on April 1,

⁴ Cf. Johnson, G. Griffith, *The Treasury and Monetary Policy*, Cambridge Harvard University Press, 1939, pages 92-128.

1935, devalued the belga 28 per cent. During 1935 France lost over \$800,000,000 in gold. Although the flight of capital was checked in the early months of 1936, it became serious again in April. Altogether, between March, 1935, and September 25, 1936, the Bank of France gave up \$2,100,000,000 in gold. On September 26, 1936, France formally abandoned the gold standard, and the Gold Bloc was definitely broken. Immediately the Netherlands and Switzerland suspended gold payments. The French Government was authorized to fix the gold content of the franc between 65.6 and 74.8 per cent of its previous parity. The Swiss National Bank was directed to maintain the Swiss franc at a value between 66 and 75 per cent of its old gold value.

The devaluation of the currencies of the Gold Bloc countries threatened to precipitate a series of competitive devaluations. To prevent this and to establish a *de facto* stabilization of exchange rates among them, the governments of the United States, England, and France announced an agreement whereby each undertook to assist in maintaining exchange stability. This so-called Tripartite Agreement was later extended to include other members of the old Gold Bloc. Each party to the agreement undertook to consult with the others and to use appropriate measures to avoid exchange fluctuation and competitive exchange depreciation. Like the United States, France utilized the profit from devaluation of the currency to establish an exchange stabilization fund. In spite of the devaluation of 1936, the flight from the franc continued and the French fund suffered heavy losses in a vain attempt to support the exchange value of the franc. Further devaluation of the franc followed in 1937, when it fell to 58 per cent and, later in the year, to 50 per cent of its 1935 gold value. By the end of 1938, it had been stabilized at 40 per cent of its 1935 value, where it remained until the outbreak of war in 1939.

Exchange Control by Direct Pressure on the Balance of Payments

Exchange control of the type exercised by the British Exchange Equalization Account is designed to stabilize exchange rates by offsetting temporary pressure of both seasonal and speculative varieties. It held exchange speculation in check by giving sufficient support to the market to reassure the timid and to confound the pure speculator. Under ordinary circumstances, it is difficult to conceive of a greater folly than selling a currency in expectation of a future decline in its value when such a for-

midable force as the British Equalization Account is operating in support of the market. Without question, the British Account, operating in a flexible yet firm manner, successfully combated speculative exchange operations as long as the flight of capital did not assume panic proportions.

But even a fund as large as the British Exchange Equalization Account is necessarily helpless in the face of such a flight of capital as that induced by the threat of a general European war or by its actual appearance. When the Munich crisis of September, 1938, induced a heavy flight of capital from European countries to the United States, the pound fell in value from \$4.92 in July to \$4.75 the following November, in spite of the fact that the British Exchange Equalization Account surrendered over £200,000,000 in gold (roughly \$1,000,000,000). The crisis leading to the declaration of war on Germany by England and France in September, 1939, again compelled the Account to export large amounts of gold to support the pound. Even so, the pound declined in value from \$4.68 in July, 1939, to \$3.99 in September.

The actual outbreak of war itself was the signal for both England and France to abandon attempts to control exchange rates by means of the operations of the exchange equalization or stabilization accounts in free exchange markets. Direct controls were established over the transactions affecting the balance of payments and exchange rates.⁵

Reasons for the imposition of exchange restrictions during depression. The financial crises of 1931 brought grave exchange difficulties to many countries. When a flight of capital accompanied these disturbances, it placed an almost unbearable burden upon the monetary systems of countries with inadequate gold supplies. Countries well fortified with gold, such as the United States and France, were able to weather the storm, but England, with its relatively small gold supply, was compelled to suspend gold payments in September. Especially difficult were the positions of weak debtor nations, which found that the depression had not only shut off the accustomed flow of foreign loans but, by sharply reducing their export trade, had also made the servicing of old foreign debts extremely difficult.

⁵ Although, before the outbreak of war, the exchange market was ostensibly free, direct pressure had sometimes been used to discourage capital exports. In London an unofficial ban was placed upon the purchase of American securities in May, 1939, to relieve pressure upon the Equalization Account, *New York Times*, May 18, 1939.

The choices open to countries unable to draw upon an ample gold supply were limited. Because of panic conditions, an increase in the discount rates within the country losing gold was no longer effective in attracting foreign short-term capital. This was true even in London itself, where the discount rate had so long been successfully used for this purpose. At such a time, the effect tends to be just the opposite, for an increase in the rate is construed to be a sign of weakness. Smaller countries, of course, can make little use of the discount rate at any time to influence the flow of short-term capital. Nor was there any hope of relief, during such a period of general world depression, in embarking upon a program of internal price deflation. At best, success would be doubtful and could hardly be counted on to create such an immediate change in the balance of payments as to offset the effect of capital flight. Moreover, these countries were weary of depression, and any attempt to bring about a further deflation of prices and costs, with the accompanying aggravation of unemployment and bankruptcy, was not politically tolerable. The most natural policy to expect under such circumstances, therefore, was the abandonment of gold and a depreciation of the exchange value of the currencies. This was the policy successfully followed by England and the other members of the Sterling Bloc. It offered the advantage over deflation of being quickly accomplished, and at the same time it was free from the depressing effects of deflation upon the domestic economy. The depreciation of the exchange value of the currencies lowered the costs and prices of goods produced for export, increased the cost of imports, and encouraged domestic recovery.

But the idea of embarking upon a policy of exchange depreciation was repugnant in many countries that had not forgotten the ravages of acute inflation and the accompanying exchange depreciation of the postwar years. The fact that exchange depreciation in the depths of world depression is quite different from the depreciation experiences after the war did not alter popular distrust of the matter. Moreover, unless it might be confidently expected that devaluation or depreciation would so improve domestic conditions as to induce speculators to believe that capital remaining in the country was now safe, devaluation would provide no certain relief from the flight of capital.⁶ In any event, it is undesirable to attempt to readjust a country's

⁶ Only if the flight were induced by the expectation of a given devaluation, and if the expected devaluation were accomplished, would this put an end to the flight of capital.

imports and exports to meet the whims of short-term capital movements.

It is not surprising, therefore, that some countries rejected both deflation and exchange depreciation and sought relief for their troubles by bringing pressure to bear upon the transactions that were to blame for the adverse balance of payments. Such control naturally was aimed first at shutting off the flight of capital, which was such a powerful and demoralizing force in the exchange markets.

Control of capital exports. Control over capital exports is established by the prohibition of the purchase of foreign exchange for the purpose of transferring capital out of the country. To make the control effective, all dealings in foreign exchange must be brought under regulation. All exporters possessing foreign bills of exchange are required to sell these bills to the control agency at a set or official price, and the export of gold and currency is banned. Purchases of foreign exchange must be made from the official control agency and are restricted to noncapital transactions. To prevent the development of "black markets," where exporters dispose of their foreign bills at prices above the official rate to persons wishing to export capital, rigid controls are required, but even so some evasion is almost certain to occur.

It is impossible to prevent the sale of bills of exchange drawn on the country attempting to restrict capital exports by persons living abroad where the official rate cannot be enforced. To prevent the sale of bills at a discount abroad and the use of these bills to pay for current exports from the control country, it becomes necessary to adopt the policy of "blocked accounts." The blocking of accounts simply means that funds within the control country belonging to persons living abroad may not be used to pay for exports from that country. If resort were not had to this policy, capital might leave the country in the guise of exported goods, and the proceeds from current exports would then not be available to pay for the necessary imports. Moreover, to prevent pressure on the exchanges arising from the payment of interest and principal on foreign debts, such claims too must be placed in blocked accounts.

Under the circumstances just described, the primary purpose and effect of exchange control is to remove from the balance of payments the uncurrent items, such as old debt service and capital movements. With this pressure relieved, it is reasonable to expect that the current import and export items of trade may be

brought into balance with ease. But the cure so cleverly arranged may become worse than the disease. First, the suspension of service on foreign debts places an almost insurmountable barrier in the way of new loans from abroad. This closes the door to one possible source of relief from the original difficulties of the adverse balance of payment. Second, exchange control of this sort necessarily involves the maintenance of an official rate at which foreign bills of exchange may be bought and sold. So long as the official rate is the same as the equilibrium rate which permits a balance between current noncapital import and export items, no trouble need arise. But control countries frequently attempt to avoid internal price deflation while prices continue to fall in the outside world. The official rate of exchange, though correct at the start, may soon overvalue the domestic currency. Then exports languish while imports are stimulated, and the balance of payments is again upset. It then becomes necessary to extend control to the items of current trade. "Unnecessary" imports must be discouraged by tariffs or quota limits. Bureaucratic interference with normal trade becomes burdensome and uneconomical, with undesirable results upon the domestic economy.⁷

Exchange control in England after the outbreak of war, September, 1939. Both England and France promptly set up exchange control regulations after the outbreak of war on September 1, 1939. In England all dealings in foreign exchange were concentrated in the hands of authorized dealers operating under the control of the Bank of England. With certain exceptions, residents of the United Kingdom were required to sell all of their receipts of foreign exchange and foreign currency to these authorized dealers who hold the proceeds for Government account.⁸ Moreover, all old holdings of gold and foreign currencies had to be sold to the Treasury unless needed by the holder for certain approved purposes. All exports of gold and currency were subject to license. Foreign exchange could be freely purchased to pay for imports contracted for before the declaration of war, to pay reasonable travel expenses (up to £25), and to meet reasonable business requirements in the way

⁷ For an able discussion of the problem of exchange control, see Ellis, Howard S., *Exchange Control in Central Europe*, Cambridge, Harvard University Press, 1941.

⁸ In particular, this was required of receipts from the United States, the Argentine, Belgium, Canada, France, the Netherlands, Norway, Sweden, and Switzerland. *Federal Reserve Bulletin*, December, 1939.

of imports, insurance, and freight charges. All other transactions were subject to strict review. As a rule, permits were not granted to purchase foreign exchange for the export of either British- or foreign-owned capital, to grant credits for financing non-British foreign trade requiring a loss of foreign exchange, or for forward exchange operations of noncommercial varieties.⁹

These exchange restrictions were primarily designed to prevent capital exports from using up foreign exchange badly needed to purchase war supplies abroad. Likewise, restrictions were placed upon the use of foreign exchange for the purchase of unnecessary imports. In this way the authorities hoped to escape the embarrassment of a foreign exchange shortage in times when exports were difficult to expand.

British wartime exchange control included the fixing of an official buying and selling rate for foreign exchange with the dollar rate slightly above \$4.00 per pound. This fairly dear pound and cheap dollar rate had the advantage of keeping down the costs of imports. The official rate was maintained by combining direct restraint upon capital exports and unnecessary imports, with a judicious use of the Exchange Equalization Account's gold supply.

Weakness of the British exchange controls. As instituted in September, 1939, the British exchange control failed to eliminate all exports of capital through the foreign exchange market. No restriction was placed upon the sale of pound balances by foreigners to persons in their own and other countries, or the use of such funds by the purchasers to pay for British exports. Thus, although capital funds might not be withdrawn from London by the purchase of foreign exchange, it might escape indirectly by being used to pay for British exports. This evasion tended to deprive Britain of foreign exchange needed to pay for imports quite as effectively as if the owners of such capital had been allowed to purchase foreign exchange through the official exchange market.¹⁰ This illustrates what was said earlier: that the institution of exchange control to prevent capital flight requires the blocking of capital funds belonging to foreigners and restricting their use within the control country.

⁹ Einzig, Paul, "The Unofficial Market in Sterling," *The Economic Journal*, December, 1939.

¹⁰ Einzig, *op. cit.*, Einzig believes that as a matter of policy Britain erred in prohibiting the withdrawal of capital funds from London. He holds that the First World War practice was preferable, when foreign funds were freely withdrawable at the fixed rate of exchange. As a result, there was a net inflow of capital during the war. Failing to follow this policy, as an alternative Britain should have blocked foreign balances altogether.

Gradually the British controls have been extended until the original holes in the exchange market have been effectively plugged. Before March, 1940, it was permissible to pay for nearly all British exports in "free sterling" or drafts drawn on blocked balances in London and purchased outside the official exchange market. In March, however, exports of tin, rubber, jute, whiskey, and furs were put upon a list of things which no longer could be purchased with "free sterling." In June, 1940, more rigorous exchange controls were instituted. The sale of foreign-owned securities in British markets was suspended and all merchandise exports to the United States required payment in dollars or in pounds purchased at the official market rate. At that time only Switzerland and the United States remained without bilateral payment agreements with Britain.¹¹

Blocked Currencies

We have already examined the general procedure by which countries suffering an unfavorable balance of payments have attempted to find a remedy in prohibiting the purchase of foreign exchange for the purpose of exporting capital and servicing foreign debts. In that connection we saw that it was necessary not only to place restrictions upon the purchase of foreign exchange, but also to prohibit the use of funds belonging to foreigners in the purchase of exportable goods. Otherwise, evasion of the exchange restrictions became easy, for exports paid for in such internal credits would not create new foreign exchange needed to pay for current imports. The foreign-owned funds held in exchange-control countries were therefore "blocked" and their use subject to severe restrictions.

The claims of foreigners on funds in an exchange-control country originate in any one of several ways:

1. They may consist of normal working balances needed by foreign exchange dealers trading in exchange drafts of that country.
2. They may consist of short-term capital which has previously moved into the country in search of earnings or security.
3. They may consist of interest on long-term loans, including the amortization of principal.
4. They may consist of short-term commercial credits.
5. They may consist of funds received from the sale of securities.

¹¹ *Federal Reserve Bulletin*, May, 1940, p. 383; July, 1940, p. 638. Bilateral clearing agreements will be examined later in this chapter.

The goal sought in the establishment of blocked accounts includes both the removal of the immediate threat to the rate of exchange arising from attempts to transfer such funds out of the country and the reduction of interest charges on foreign debts. In seeking this goal, control countries encourage the funding of short-term debts into long maturities which still remain under the ban of capital exports. A reduction of interest charges is sometimes exacted as a price for relaxing restrictions on the use of blocked accounts.

The German Standstill Agreements. An early example of blocked currencies is provided by the well-known Standstill Agreements adopted to cover Germany's short-term foreign indebtedness in 1931. The financial and banking difficulties of 1931 took a serious turn with the collapse of Austria's largest bank, the Credit-Anstalt, in May, 1931. Although the bank's liabilities were guaranteed by the Austrian Government in June, the flame of panic kindled in Austria rapidly spread to Germany. During June the German banking system suffered from the pressure of foreign creditors. Commercial failures aggravated the situation, and on July 13 the Danatbank, one of the four largest German banks, failed. It became necessary for the Government to declare a debt moratorium and to place foreign exchange transactions under control.¹²

When the debt moratorium was relaxed in August, foreign creditors were compelled to submit to the so-called Standstill Agreements. The Standstill originally covered short-term debts, amounting to 5,000,000,000 marks (about 1¼ billion dollars) owed by Germany to foreign countries. During the first year and a half, these debts were reduced by about one-fourth; and by March 31, 1939, about \$325,000,000 remained covered by the Standstill Agreement. The Agreement was cancelled September 3, 1939, because of the outbreak of the war. The original Standstill Agreement expired in six months and was followed by renewals. Each renewal saw some modification in the arrangements. Interest charges were reduced, and the amounts made available and the mode of payment were changed. Furthermore, as time went on, increased numbers of foreign debts were included. In 1932 short-term public debts were brought in, and in 1933 restrictions were placed on the payments on long-term foreign debts.¹³

¹² Hodson, H. V., *Slump and Recovery, 1929-1937*, New York, Oxford University Press, 1938, pp. 64-71.

¹³ Hodson, *op. cit.*, pp. 111-118.

Blocked marks. The German restrictions upon foreign exchange transfers by the use of blocked accounts are well illustrated in the following description of blocked marks existing in 1936:¹⁴

1. Register Mark Credits. These marks arose out of the Standstill Agreements, and under certain conditions might be used for investment in Germany and, among other things, certain types of tourist expenses.

2. Non-interest-bearing Reichsmark Trustee Credits. These consisted of interest payments on the Dawes and Young loans not otherwise handled. These credits might be used, upon the approval of the Reichsbank, to purchase German bonds, shares, long-term loans, mortgages, land, and other property, and for expenses for temporary visits in Germany.

3. Credit Blocked Accounts (Kreditspermark). These marks consisted of the proceeds from the sale of property within Germany and from repayments on loans not covered by the Standstill Agreements. They might be used to buy certain German Reichsmark securities, to make investments in mortgages or real property, and to pay expenses of a non-business journey to Germany by the original holder of the account. The maximum allowed for travel was 2,000 marks per person per month.

Also, these marks might be used by the original holder for charitable purposes within Germany and for taxes, court costs, and legal charges connected with the creation or administration of the blocked account. Finally, they might be used for payment of 25 per cent of the invoice price of new orders of German goods or services. The remaining 75 per cent of the invoice had to be paid in foreign currency or in free marks. These marks, however, could not be used to make any part of the payments for exports to countries with which Germany had clearing agreements.

4. Foreigners' Special Accounts for Inland Payments (Aski Marks). These were accounts with German banks in the name of foreign firms trading with Germany, set up to receive and hold Reichsmarks in payment for German imports. The foreign firms might pay for one-third of the value of goods bought in Germany in Aski Marks if the balance were paid in free foreign currency.

¹⁴ As reported by E. C. Donaldson Rawlins in *Economic Conditions in Germany to March, 1936*, Chapter V. The five classes of blocked marks described here are only a partial list.

5. Clearing Agreement Accounts (Verrechnungsmark). Into these accounts German importers paid marks, which were later turned over to German exporters. These accounts were used in settlements between Germany and other countries with which she had clearing agreements.

The use of blocked accounts by other countries. Although Germany probably has surpassed all other countries in the variety and number of blocked accounts, it has by no means been the sole user of this type of exchange control. During the 1930's, many countries in central and eastern Europe at one time or another made use of blocked accounts, while in South America both Brazil and Argentina engaged in the practice of blocking commercial balances.¹⁵

The exploitation of creditors through the use of blocked accounts. Ostensibly, the practice of blocking foreign-owned credits and balances is designed to protect the balance of payments of the exchange-control country from pressure during temporary periods of economic dislocation. But it has in fact gone much farther than the mere temporary postponement of creditors' claims. As the price for the release of part of these blocked accounts, creditors have been coerced into compromising their claims, both by reducing interest and by cancelling part of the principal. Furthermore, the blocking of interest and amortization payments on foreign-owned securities causes a sharp drop in the market value of such securities in the creditor countries. Likewise, blocked balances themselves are offered for sale in the creditor countries at heavy discounts. The control authority in the debtor country monopolizes all foreign exchange created by current exports and is able, therefore, to utilize part of this exchange to purchase these securities and blocked accounts at their depreciated values. The control authority is able thus to gain by the difference between what it pays for these blocked credits and securities and what they are worth within its own country. The profits obtained in this manner have sometimes been used to pay a subsidy to exporters in order that they might more readily meet foreign competition and expand the country's export trade. Exports made possible by this type of subsidy are called "additional" exports, a name derived from the belief that they rep-

¹⁵ Cf. Ellis, "Exchange Control in Austria and Hungary," *Quarterly Journal of Economics*, November, 1939, Part II. For an account of blocked commercial accounts in Argentina and Brazil, see Horace G. White's "Blocked Commercial Balances," *American Economic Review*, March, 1939.

resent extra exports made possible by the exchange control practices.

There is serious reason to doubt that export trade is substantially benefited by this use of subsidies. The reason for this doubt rests in the fact that exchange control of the type we have been considering involves the maintenance of an official rate of exchange. As long as this rate is approximately equal to the true equilibrium rate, and the domestic currency is not overvalued in terms of foreign currencies, exporters enjoy all of their ordinary advantages in the export markets. Under these circumstances, the careful subsidization of firms whose products are just on the exportable margin would result in an expansion of exports by these firms, with the foreign creditors paying part of the bill. But if, because of a relative rise in domestic prices, the official buying and selling rates for foreign exchange overvalue the domestic currency, the subsidy to exporters may do little more than offset their disadvantages arising from the unfavorable exchange rates.¹⁶

Bilateral Clearing Agreements

Blocked accounts, primarily devised to prevent the use of foreign exchange for the payment of old debts and the flight of capital, originate in the unilateral action of the debtor country. They lead, however, to bilateral agreements in which creditor countries have a hand. One reason for the appearance of bilateral agreements is the attempt of foreign creditors to realize something more substantial on their claims than unfulfilled promises. To accomplish this, these creditors to whom debts are owed by the control country must arrange to have their government set up a central agency to handle payments due the debtor country on current imports. Under this arrangement, importers in the creditor country make payment to the central agency in their own country instead of remitting directly to the exporter in the exchange-control country. Before paying the funds to the foreign exporter, the creditor country's central agency will deduct something for payment to holders of blocked accounts. In this manner, the creditors receive partial payment from the proceeds of the debtor country's exports. But, quite naturally, the debtor will not submit to this use of its exports to liquidate blocked accounts unless its trade with the creditor country is considered vital. Hence, creditor countries which are good markets and

¹⁶ On this point, see Ellis, *op. cit.*, pp. 17-21.

have an unfavorable balance of trade with the debtor are most likely to succeed in arranging for liquidation of blocked credits abroad.¹⁷ The accompanying illustration shows the working of such agreements. The price of these agreements is the establishment of a similar agency in the debtor country, to which payments are made for imports from the creditor country. A second reason for establishing bilateral clearing agreements is the desire of importers in the country which has blocked foreign balances to be able to continue needed purchases abroad. It aids in

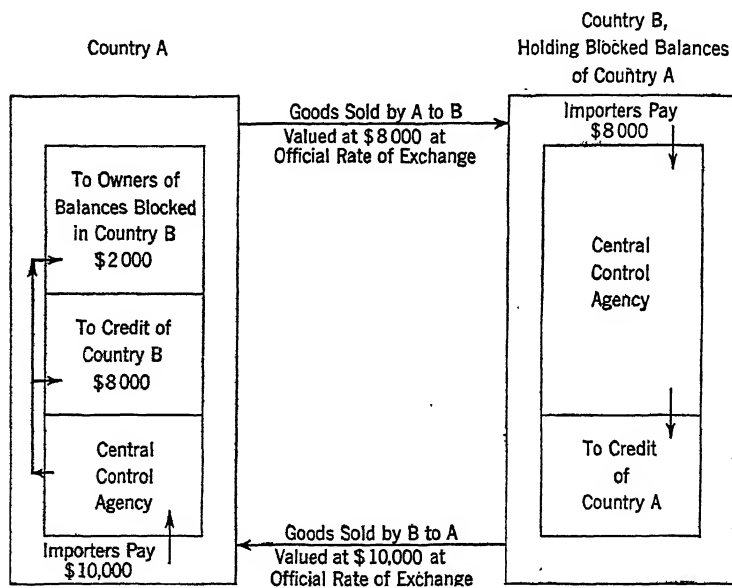


CHART 35. ILLUSTRATION OF BILATERAL CLEARING AGREEMENT IN WHICH ONE COUNTRY RECEIVES PAYMENTS ON BLOCKED BALANCES HELD BY THE OTHER.

accomplishing this if a clearing agreement is set up under which the foreign country agrees to accept exports from the exchange-control country in payment for the desired imports. In each country, there is established under governmental control a fund derived from its imports from the other. When settlement between these two accounts is made in foreign exchange, the arrangement is known as a "payment agreement." When settlement is solely by offsetting claims in one account against those in the other, it is known as a "clearing agreement." Sometimes not only is foreign exchange not used in making settlements, but also

¹⁷ League of Nations, *Enquiry into Clearing Agreements*, 1935, pp. 11-12.

balances are prevented from accumulating on open book accounts to await periodic balancing of the totals. In such a case, each individual import must be offset by an export of equal value. Such barter arrangements are called "compensation."¹⁸ The use of the compensation method of settlement limits the choices of importers and exporters, since their trade involves the difficulty of the "double coincidence of wants." Likewise, it in no way helps to work out the payment of foreign debts. The advantage consists, however, in the fact that compensation settlements allow some trade to continue at times when an unliquidated clearing balance makes further use of clearings impossible.

The Effects of Exchange Controls

One of the possible consequences of exchange control is the establishing of an official rate which tends to be higher than the equilibrium foreign exchange rate. Thus, exports languish, imports are stimulated, and the problem of an adverse balance of payments reappears in the form of an inability to bring current export and import items into balance. This situation calls for remedial action which may take the form of surcharges on imports from which export bounties may be granted. Moreover, the shortage of foreign exchange makes it imperative that unnecessary imports be held in check in order that needed imports may be had in the desired amounts. This, in turn, requires the allocation of foreign exchange to those importers whose claims seem most impressive to the ears of the exchange-control authorities. Thus, the interference with the internal economic functions, through the subsidization of exports and the restraints upon imports, becomes more and more disturbing.

The use of clearing agreements places yet more interferences in the natural channels of international trade. The debtor country tends more and more to direct its import trade toward the countries with which it has clearing agreements, for it is with them that it has its best export trade. Trade with other countries must be kept at a minimum to husband the scarce supply of free foreign exchange required for such necessities as must be purchased abroad in free exchange markets. This tendency decreases the normal trade between the control country and third countries, to their mutual disadvantage. Moreover, creditor countries which are parties to clearing agreements may find it difficult to collect adequate amounts on blocked accounts without

¹⁸ Cf. Ellis, *op. cit.*, pp. 13-17.

increasing still more the size of their adverse balance of trade with the debtor countries. If, during depression at home, an expansion of the creditor's imports seems undesirable, it may adopt the alternative method of placing restraints upon exports to the debtor country. Again, this reduces trade between nations. It is not surprising, therefore, that most governments answering the inquiry of the League of Nations stated that they considered the clearing agreements a necessary evil which they soon hoped to abandon in favor of the normal methods of international trade.¹⁹ Nor is it surprising that the League of Nations Committee which carried on the investigation concluded, "The present situation proves beyond all doubt that the control of debt settlement by exchange control does not achieve its object. Exports, and consequently the actual settlement of debts, are thereby made more difficult."²⁰

¹⁹ League of Nations, *Enquiry into Clearing Agreements*, 1935, p. 17.

²⁰ *Ibid.*, pp. 18-19.

CHAPTER XLI

EXCHANGE DEPRECIATION, 1929-1936

IN OUR earlier study of the question of international price equilibrium and exchange rates, we examined the effect of the fear of internal price inflation on exchange depreciation and on the movement of prices, with particular attention to events in France, Germany, and Austria during the 1920's. The depreciation of exchange rates which occurred after 1929, however, was not due to fear of internal price inflation. Instead, it was the pressure of extreme depression which upset the equilibrium in the balance of payments in many countries, made impossible the maintenance of the gold standard, and led to exchange depreciation.

The reasons for exchange depreciation after 1929. Three basic reasons may be given for the depreciation in exchange rates after 1929. First, some currencies (sterling, for example) possibly were overvalued at their existing gold parities, so that it had been difficult to maintain an equilibrium in the balance of payments. The abandonment of gold permitted the exchange values of such currencies to depreciate to their real parity. This tendency may partially account for the decline in the dollar value of the pound after gold was abandoned by England in September, 1931. Second, the abandonment of gold was quite properly taken to indicate the end of the harsh deflationary practices previously imposed by the attempt to remain on the gold standard during a period of severe depression. To many, therefore, the abandonment of gold meant that inflationary measures would be successfully adopted. The expectation of an increase in prices led to some flight of capital and a decline in the exchange value of the currencies concerned. Third, in some instances exchange depreciation was the result of conscious governmental policy designed to promote internal business recovery. The devaluation of the dollar during 1933 and early 1934 was probably the most conspicuous example of such policy.

Voluntary Exchange Depreciation

Competitive exchange depreciation. When a country intentionally induces a fall in the exchange value of its currency, its immediate aim is to stimulate domestic business by encouraging exports, checking imports, and inducing a rise in the domestic price level. The advantages sought can best be achieved if the currency becomes undervalued in terms of foreign currencies. When one country succumbs to the temptation to depreciate or undervalue its currency on the foreign exchange markets, other currencies must necessarily become correspondingly overvalued. Competitive depreciation is therefore likely to spread to other countries, for it is a game at which more than one can play.

There are several different ways in which voluntary exchange depreciation may be accomplished. First, direct threats of monetary inflation may induce speculative exchange dealings and capital flight, which will depress the value of the domestic currency. Second, the central bank may enter the foreign exchange market and depress the value of the domestic currency by offering to buy foreign exchange at higher rates. Third, gold standard countries may depress the exchange value of their currencies by devaluation or a reduction in the gold content of the standard monetary unit.

Reasons for voluntary exchange depreciation. Before 1929 one seldom if ever heard of an attempt to improve the national economy by intentional depreciation of a country's currency. To be sure, the wisdom of England's return to the old, full-weight gold pound in 1925 had been seriously questioned, and the advantage which accrued to France when it stabilized the franc at a gold value below its equilibrium value had been recognized. Competitive devaluation or exchange depreciation, however, was not given favorable consideration. Inflation rather than deflation was the specter which haunted statesmen in those days. In the public mind, exchange depreciation was almost synonymous with inflation, and both were to be diligently shunned. Threats of an unfavorable balance of payments were, therefore, met with deflationary tactics or protective tariffs.

One can readily appreciate the very real advantages which follow the depreciation of a currency which previously has been overvalued in the foreign exchange markets. Identical advantages tend to appear in the country which intentionally forces down the foreign exchange value of its currency *below* the true equilibrium rate. The cheapening of the domestic currency in the foreign exchange markets makes exports cheaper for for-

eigners to buy and at the same time makes importing more costly. We are already familiar with the way in which the economic forces operate to restore the equilibrium rate of exchange once it is disturbed. If exchange rates are free to move, adjustments appear quickly through appropriate changes in the rate. If, as is the case with intentional exchange depreciation, the exchange rate is stoutly held below the equilibrium point, a slower adjustment tends to take place through appropriate movements in the level of prices. It is clear that so long as prices are not sufficiently adjusted to make the new low exchange rate the equilibrium rate, exports are stimulated, imports are retarded, and domestic industry is encouraged.¹ Thus, a lag in the adjustment of prices may be considered beneficial in promoting domestic recovery. The prices of goods which move freely in international trade can be expected to make an almost immediate adjustment to the change in the exchange rate. Prices of such commodities must necessarily become adjusted so that the difference in price at home and abroad, when calculated at the ruling rate of exchange, is no more than the cost of transfer from one country to the other. Although this is true, the costs of producing such commodities will lag behind their prices substantially. Even though export prices rise, the stimulating effects of exchange depreciation do not disappear so long as the lag in costs persists, since exporters retain a relative, competitive advantage over producers in countries with overvalued currencies. If retaliatory action is immediately taken by other countries, the realized benefits from exchange depreciation may not be so great as anticipated. Such retaliation may take the form of (1) exchange depreciation or (2) tariffs and quotas on imports from the country practicing depreciation.

Voluntary exchange depreciation and corrections in the price levels. That a movement of the rate of exchange away from equilibrium leads to the operation of forces tending to restore equilibrium can hardly be disputed. If the exchange rate is not permitted to shift in the direction of equilibrium, the price levels must do so. In the latter case, two distinct questions arise: First, how much time must elapse before prices may be expected to move to an equilibrium position? Second, to what extent will the adjustment in prices occur inside the country with depressed exchanges as compared with price adjustments occurring in the

¹ Even after prices have risen within the country practicing exchange depreciation, the beneficial effects are not entirely lost. The initial impetus to business recovery may be followed by a general cyclical improvement. A genuine advantage from higher prices is found in the improved cost-debt-price relationship.

outside world? Both of these questions are pertinent to any attempt to evaluate the effectiveness of exchange depreciation as a recovery measure.

The lag between exchange depreciation and changes in the price levels required to make the new rate of exchange an equilibrium rate must necessarily depend upon the circumstances. To be sure, the prices of goods moving directly in international trade will be immediately adjusted so that the difference in price, computed at the ruling rate of exchange, will differ between countries by no more than the cost of transfer. Yet the fundamental costs, the prices of the factors of production, may change much more slowly. If the country which depreciates its exchange rate is plentifully supplied with idle factors of production or factors that may readily be switched from other industry to the making of exports, the increased price of exports will have but little immediate effect upon the price of the factors. Since countries that have tried voluntary exchange depreciation have been countries in the throes of depression, one might well expect a considerable lag between an increase in prices and costs. Similarly, the higher costs of imports resulting from exchange depreciation encourages home production with little effect on costs. Evidence of the existence of a very substantial lag of costs behind price movements is presented in Table 68.

Will voluntary exchange depreciation raise domestic prices? Because of the attempt made to raise prices by devaluing the dollar in 1933-1934, the effectiveness of voluntary exchange depreciation as a means of raising domestic prices has been the subject of much controversy in the United States. Two separate questions must be explored before the answer can be reached. First is the question of the degree to which actual net price adjustments occur following a depreciation of the exchanges. Some evidence of the incompleteness and the lag in such adjustments appears in Table 68. It seems that there is little reason to expect anything like a proportional change in the fundamental price structure as a result of devaluation, although changes in import and export prices are bound to occur. In a small country, where imports and exports play a large part in the total economy, the adjustments in import and export prices tend to cause substantial adjustments in the total price level. On the other hand, in a large country like the United States, where foreign trade is relatively small as compared with domestic trade, the effect on the general level of prices is unlikely to be of any great immediate importance.

TABLE 68

PERCENTAGE ADJUSTMENT TO EXCHANGE DEPRECIATION OF WHOLESALE PRICES,
WAGES, COST OF LIVING, IMPORT PRICES, AND EXPORT PRICES *

Price Index Used	Number of Countries with Ex- change De- preciation	Amount of Average Adjustment of Prices in Per Cent of Exchange Depreciation up to and Including:			
		YEAR I	YEAR II	YEAR III	YEAR IV
Wholesale prices (Compared with 5 gold standard countries)	8	+25	+32	+40	+42
Wholesale prices (Compared with France)	8	+ 8	+23	+28	+36
Cost of living (Compared with France)	9	- 4	+ 2	0	- 1
Wages (Compared with France)	11	+ 1	+ 2	- 2	- 4
Import prices (Compared with France)	11	+68	+50	+56	....
Export prices (Compared with France)	11	+60	+37	+37	....

* From Harris, S. E., *Exchange Depreciation*, Cambridge, Harvard University Press, 1936, p. 69. Quoted by permission of the President and Fellows of Harvard College.

The price adjustments given in the above table were calculated by computing the average net price adjustment between the countries with depreciated currencies and gold standard countries, and comparing the net price adjustment with the average amount of currency depreciation. For example, if prices in the United States rose 27 per cent and prices in France fell 10 per cent, the rise of prices in the United States over prices in gold standard France was $\frac{27}{10}\%$, or 30 per cent. If, owing to devaluation of the dollar, the rise in price of dollars in terms of gold francs was 70 per cent, relative prices in the United States should have shifted by the same amount to have made a complete adjustment to the depreciation of the dollar. The percentage ratio of the actual price adjustment to the depreciation of the dollar, according to our example, would be $\frac{30}{70}\%$, or 43 per cent, which may be taken as the percentage of the adjustment of prices to exchange depreciation.

The second question has to do with the extent to which actual price adjustments take place in the domestic market instead of in foreign markets. It should be obvious that one cannot forecast accurately whether equilibrium will be restored by an increase in prices and costs within the country practicing exchange depreciation, or by a fall in prices in the outside world. Nevertheless, there are certain conditions under which one effect is more probable than the other. If we enumerate the conditions that operate in favor of and against the rise of domestic prices,

we shall be in a better position to evaluate the probable benefits of exchange depreciation to the price level.

Under the following conditions, exchange depreciation should tend to bring about a relatively large internal rise in prices: ²

(a) When exports constitute a relatively small part of the world trade in that commodity. This situation makes for an elastic demand for the country's exports.

(b) When its exportable goods are largely produced for export and constitute but a small fraction of the purely domestic trade. This makes for a relatively inelastic supply, since a rise in export prices cannot attract large supplies from the home market into the foreign market.

(c) When the domestic demand for exportable goods is inelastic, so that a rise in export prices will not be able easily to attract supplies from the domestic market.

(d) When the supply of the same exportable products is elastic in other countries producing the same things. Thus, the increased exports of the country practicing exchange depreciation will have less depressing effect on world markets than otherwise, because of the ready shrinkage of supply from other sources as world prices weaken.

(e) When the number of countries attempting simultaneous use of exchange depreciation is small. This arises from requirement (a).

(f) When foreign trade commodities make up a large part of those entering into domestic trade. If a small country is dependent upon its foreign trade to such an extent that nearly all of its domestic trade is intimately tied up with import and export commodities, the general price level will respond quickly to changes in import and export prices.

On the other hand, exchange depreciation should tend to depress foreign prices rather than raise domestic prices when:

(a) Domestic supplies of export goods are elastic.

(b) Foreign demand for such goods is inelastic because of few alternate sources of supply.

(c) When the number and size of countries engaging in currency depreciation are large compared with the importance of countries not indulging in the practice.

One may, therefore, expect that exchange depreciation practiced by a small country whose exports consist of widely produced

² Harris, S. E., *Exchange Depreciation*, Cambridge, Harvard University Press, 1936, Chapter II.

staples and whose imports consist of goods having an elastic supply would be very effective in raising import and export prices within that country. As a recovery measure, it might be recommended for such a country. Moreover, the imports and exports of a small country directly affect domestic trade and the whole domestic economy to a much greater degree than is the case with large countries. Being small, such a country might safely engage in exchange depreciation without stirring up opposition abroad in the form of tariffs and quotas against exchange dumping. This policy practiced by a small country is more likely, therefore, to raise internal prices than to depress world prices.

But when a large country engages in exchange depreciation, there is less likelihood that domestic prices will rise and more likelihood that prices abroad will fall. The imports and exports of a large country have relatively greater weight in the world markets and, therefore, are more likely to cause a shift in foreign prices. Exchange dumping by a large country will invite retaliatory action on the part of other countries. Furthermore, the greater the number of countries involved in exchange depreciation, the less will be the likelihood of domestic price increases. If all countries were to make the attempt to depreciate their currencies at the same time and to the same extent, all advantage would disappear. Therefore, England in 1931 had a better chance to raise its price level by resort to exchange depreciation than did the United States in 1933, when the countries still adhering to the old parities were limited to the Continental Gold Bloc.

The Behavior of Prices Following Currency Depreciation

A considerable amount of statistical evidence has been assembled in respect to the price movements which have accompanied exchange depreciation.³ Studies of this sort have been made for the purpose of measuring the degree of price adjustment that has followed depreciation and the extent to which domestic prices have been favorably affected and foreign prices adversely affected. If it appears that the predominant result of exchange depreciation is to depress foreign prices and to intensify depression abroad, the domestic advantages of such action are likely to be small.

³ For example, see Harris, S. E., *Exchange Depreciation*; Gilbert, Milton, *Currency Depreciation and Monetary Policy*, Philadelphia, University of Pennsylvania Press, 1939; and Silverstein, Nathan L., "American Devaluation: Prices and Export Trade," *American Economic Review*, June, 1937.

The reasons for apparent imperfect adjustment of prices to exchange depreciation. In Table 68 on page 641, we have Professor Harris' calculation of the percentage adjustment of prices to exchange depreciation. His figures show not only that there was a very great lag in the adjustment of wages and costs of living, but that even import and export prices showed a remarkably incomplete adjustment. But it is highly improbable that import and export prices in fact failed to adjust themselves rapidly to the exchange rate. Hence, there must be some explanation for the discrepancy in the calculated measures of adjustment. Harris suggests, first, that the movement of prices required to restore equilibrium with the new rate of exchange was not so great as indicated by the amount of exchange depreciation. He explains this on the grounds that in all probability the rate of exchange before depreciation was sometimes too high for the existing price levels, and the currency was therefore overvalued. Part of the fall in the exchange rate merely compensated for the previous overvaluation and to that extent did not require any price adjustment. Second, Harris suggests that exporters in countries that did not depreciate their currencies made special price concessions to buyers in depreciated-currency countries. In fact, therefore, there was a greater fall in the prices of exported goods in countries remaining on the gold standard than was indicated in the published price data. Finally, since a great deal of the foreign trade of countries practicing depreciation was with each other, calculations of price adjustments between them and France alone could hardly be expected to show 100 per cent adjustment. Items of foreign trade that moved solely between countries with depreciated currencies naturally influenced the calculated movements of import and export prices of those countries. Yet prices of such commodities would be little affected by a fall in exchange rates on the Gold Bloc countries. To make a valid calculation of price adjustments, only the prices of those things that enter the trade with the Gold Bloc countries (or France, as the case may be) should be included.

Behavior of prices in countries with and without exchange depreciation. A comparison of the movement of prices in countries that depreciated their currencies with price movements in other countries may throw some light upon the effects of exchange depreciation. This comparison is shown in Chart 36. It is clear that countries which abandoned the gold standard and depreciated their currencies were promptly relieved from the pressure of falling prices. Equally clear is the fact that prices

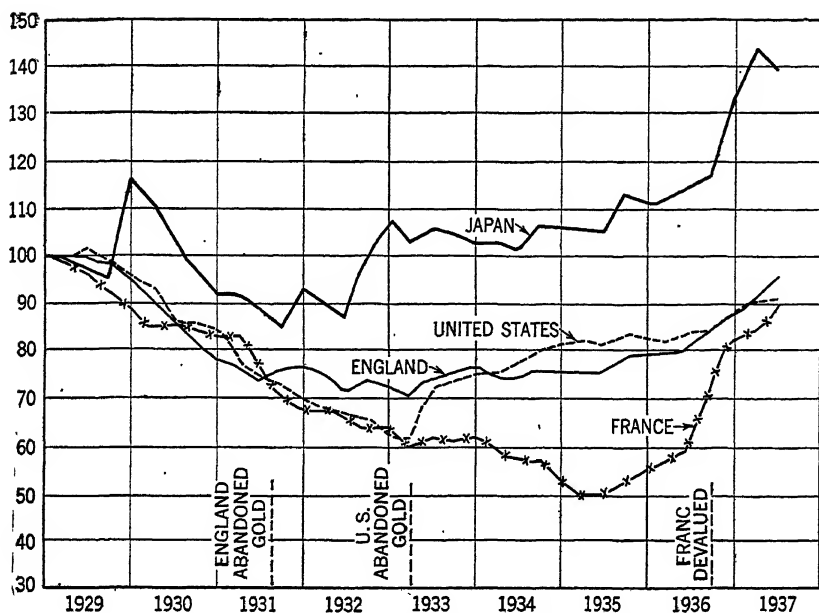


CHART 36. WHOLESALE PRICE MOVEMENTS. January, 1929 = 100.

continued to fall in the countries that remained on the gold standard without devaluation. How are these results to be interpreted?

If one favors the view that intentional exchange depreciation is a desirable national policy, the evidence supports this position. Exchange depreciation offers a way for individual countries to break away from the vicious cycle of deflation and to improve their domestic situations during periods of severe, world-wide depression. When exchange depreciation results in the undervaluation of the domestic currency, exporters are given an opportunity to seize a larger fraction than before of the reduced volume of international trade. If one wishes a less selfish justification for devaluation, he may find it in the valid argument that exchange depreciation that results merely in the decline from an overvalued rate to one of true equilibrium will stimulate foreign trade and assist in general world recovery.

If, on the other hand, one is inclined to believe that deliberate undervaluation of a currency is objectionable because of its depressing effects upon other countries, he can interpret the evidence in Chart 36 to support this view. For it may be argued that a world-wide recovery in prices was prevented by the whole-

sale currency devaluations that accompanied the departure of England from the gold standard in 1931 and the devaluation of the dollar in 1933-1934. The decline in prices in the remaining gold standard world may be directly traceable to the depressing effect of devaluation or exchange depreciation elsewhere. Therefore, since depreciation resulted in an increased deflation and depression abroad, the benefits claimed for it are largely illusory.

Evidently, one can hardly reach any very conclusive results by observing only the behavior of prices following exchange depreciation. On the face of it, the evidence supports either of the above arguments. To understand the effects of depreciation, it is necessary to examine the whole problem in more detail. For example, to measure the beneficial effects of exchange depreciation in England requires some knowledge not only of the movement of export and import prices within the country, but also of the changes that occur in the volume of trade, the condition of business, and employment. Furthermore, a satisfactory answer is needed to the question of whether the continued decline of prices in the countries remaining on gold can be ascribed to independent forces operating inevitably because of the stage of depression in which the world found itself, or to pressure arising from exchange depreciation. For if the world was about to enter a recovery phase and was prevented from doing so because of the depressing effects of currency depreciation, the gains derived from the depreciation would be zero or even negative, since all countries, including those adopting depreciation, would have participated in the general recovery.

The consequences of the depreciation of sterling. England provides a specific example of exchange depreciation by a powerful country. Between September, 1931, and March, 1933, the depreciation of the pound in terms of gold amounted to between 25 and 30 per cent. Even assuming that, before its depreciation, the pound was overvalued by about 10 per cent, it is probable that it was somewhat undervalued afterward. What, we may ask, were the effects of this depreciation upon world prices? First, the depreciation of the pound had no adverse effect upon prices in the countries that comprised the Sterling Bloc, for their currencies were allowed to depreciate as much as or more than the pound. Therefore, the fall in value of the pound may properly be charged not only with any deflationary effects in gold standard countries arising directly from the undervalued pound,

but also with the added deflationary effects of the undervaluation of other currencies whose movements followed the pound.⁴

On the other hand, it is entirely possible that the progress of the depression in the world at large had resulted in a continuous tendency for the pound to become overvalued. Because England exports manufactured products whose prices and costs fall relatively slowly, it is possible that more rapidly falling prices abroad had the effect of continuously increasing the overvaluation of the pound. If so, the depreciation of the pound by 30 per cent need not necessarily have involved any great degree of undervaluation. It is possible to obtain indirect evidence of the existence of undervaluation of the pound after 1931 by observing what occurred to the foreign trade of the gold standard countries. An undervalued pound, for instance, must have meant an overvaluation of the dollar. Is there any evidence that the American economy was suffering from an overvalued dollar between 1931 and 1933? An examination of the foreign trade developments in the United States seems to show but few signs of overvaluation of the dollar at this time. For example, if the dollar were overvalued, there should have resulted a relative expansion in imports from countries having depreciated currencies, but the facts do not bear out this expectation. Between September, 1931, and March, 1933, there is little indication that the value of American imports from depreciated-currency countries was increased at the expense of imports from gold standard countries. Instead, the imports from depreciated-currency and gold standard countries fluctuated together as business activity fluctuated within the United States. Moreover, there is evidence indicating that the value of exports from the United States was but little affected by the depreciation of the pound. After September, 1931, the fall in exports to countries having depreciated currencies was paralleled by a decline of about equal proportions in the value of exports to gold standard countries. True, the exports to gold standard countries fared slightly better than those to depreciated-currency countries, but hardly enough to indicate any serious deflationary effect arising from an overvaluation of the dollar in terms of the depreciated currencies.⁵ This fact suggests that the heavy deflation that continued in the United States during 1932 was due primarily, not to the undervaluation of the

⁴ See Gilbert, Milton, *Currency Depreciation*, Chapters IV and V, for an analysis of this.

⁵ Gilbert, *op. cit.*, pp. 96-98.

pound, but rather to independent deflationary forces operating within the gold standard world and within the country itself. Nevertheless, it is highly probable that the depreciation of the pound did have some deflationary effects in the gold standard countries.⁶

The consequences of the devaluation of the dollar. The deliberate devaluation of the dollar may be contrasted with the depreciation occurring in other countries in that it was not forced upon the country by monetary strain or an adverse balance of payments. Instead, it was adopted with the idea that it might prove valuable as a means of raising domestic prices. Any gains, therefore, were necessarily limited to the advantage derived strictly from the improved competitive position resulting from a sharply undervalued dollar. The rapid rise in prices in the United States, following the abandonment of the gold standard and the undertaking of measures designed to cause the dollar to depreciate, has sometimes been taken to indicate that devaluation achieved its purpose. The movement of prices of farm products, exports, imports, and wholesale and domestic commodities, and the relation of these price movements to the depreciation of the dollar may be clearly seen in Chart 37. It is plainly apparent that the prices of import and export commodities rose with the fall in the exchange value of the dollar. But it is equally clear that their response was almost wholly limited to the first four months of depreciation. The further depreciation of the dollar that accompanied the gold-buying policy and the final action of devaluation, between August, 1933, and February, 1934, was at least of the same magnitude as that of the March-July period. But during the later period, no comparable change in import and export prices occurred. Furthermore, domestic goods also participated in the immediate rise in prices, although they were not

⁶ Cf. Gregory, T. E., *The Gold Standard and Its Future*, 3rd ed. New York, E. P. Dutton & Co., 1935, pages 72-73, where he says, "The high hopes entertained that Great Britain's exports would be greatly stimulated have hardly been borne out by facts. The special disadvantages of an uncompensated higher cost structure had indeed disappeared, but the cumulative effects of continued world depression, tariffs and quotas, and the imitation by other industrial competitors, especially Japan, has severely limited the direct gain to this country. Since there can hardly be any doubt that the depression has been prolonged by the uncertainties and difficulties caused by the interferences with the free flow of international trade, there are no indirect gains. At best it might be argued that Great Britain has been able to snatch a rather larger share of a greatly shrunken aggregate. Against this possible advantage must be set the fact that Great Britain's action was a considerable factor in producing that complex of governmental actions which have impeded recovery." Quoted by permission of the publishers.

exposed to any direct stimulation from the cheapening of the foreign exchange value of the dollar. It seems probable, therefore, that the price movement that developed in the United States after March, 1933, was in the nature of a cyclical upswing

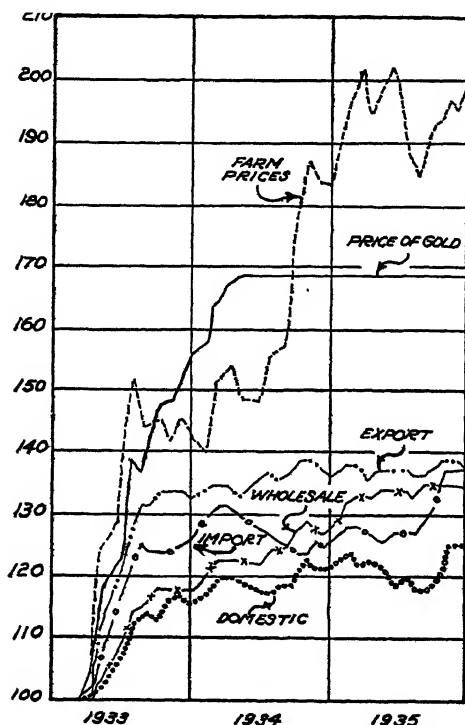


CHART 37. UNITED STATES PRICE INDEXES. March, 1933 = 100. Source: Gilbert, Milton, *Currency Depreciation*, 1939, p. 124. Reprinted by permission of University of Pennsylvania Press.

rather than a result of the depreciation of the dollar. Without question, the abandonment of the gold standard at that time set the stage for the Administration's inflationary efforts, but the general upswing of prices, including domestic prices, which terminated sharply in August and was not continued as the dollar was further depreciated, supports the view that the price movement was primarily cyclical in nature.⁷

As a recovery measure, the depreciation of the dollar was of doubtful value. Unlike the depreciation of the pound, it was not needed to correct an overvaluation of the domestic currency, and

⁷ Cf. Gilbert, *op. cit.*, pp. 117-129.

operated to overvalue the currencies of the countries that remained on the gold standard. The latter were driven in self-defense to impose new restraints on imports and to adopt drastic deflationary policies. Even so, their gold supply was constantly in danger, and the expectation that sooner or later they would have to follow the United States into currency devaluation exposed their exchange rates to a speculative flight of capital that aggravated an already difficult position.⁸

An evaluation of exchange depreciation after 1929. To evaluate the results of exchange depreciation since 1929 requires an examination of the causes that provoked it. Brazil, the Argentine, Australia, and New Zealand were the first countries forced off the gold standard during the depression. The decline in the value of their exports and the drying up of foreign loans combined so to weaken their international position that suspension became almost inevitable. Internal deflation could hardly have sufficed to save the gold standard, and under the circumstances exchange depreciation seems to have been the only reasonable way to achieve an equilibrium in their balance of payments. The purpose of depreciation in their case was not that of deliberate "exchange dumping" but merely to meet a difficult situation in the balance of payments that arose out of the depression. Under existing conditions, therefore, the depreciation seems to have been justified.⁹

The depreciation of the pound after September, 1931, resulted from the flight of capital induced by the disturbances on the Continent, although the pound's general weakness can probably be traced back to the more fundamental problem of its overvaluation. Other currencies of the Sterling Area that followed the pound did so through the compulsion arising from their close commercial ties with Great Britain. The internal effects of the depreciation of the pound were advantageous. The deflationary pressure of the gold standard was released and the overvaluation of the pound was replaced by some degree of undervaluation.

The depreciation of the dollar, on the other hand, was an out-and-out attempt to inflate domestic prices by undervaluing the currency. Its effects on domestic prices seem to have been less important than the cyclical expansion that occurred during the second quarter of 1933, when all prices moved sharply upward for a time, only to taper off during the last half of the period during

⁸ *Ibid.*, pp. 148-150.

⁹ Cf. Gilbert, *op. cit.*, p. 5; also Lawrence Smith's "Suspension of the Gold Standard," *American Economic Review*, September, 1934.

which the depreciation was being carried through. The depreciation of the dollar was partially offset by further depreciation of other free currencies, which still further increased the degree of overvaluation of the remaining gold standard currencies and sharply accentuated the depression within the countries concerned.

In evaluating the general effects of exchange depreciation since 1929, Professor Harris, who has made an exhaustive study of the problem, concludes that, on the whole, it probably did more good than harm, and that it helped rather than hampered economic recovery.¹⁰ He bases his conclusions upon the fact that depreciation sheltered countries practicing it from the declining price trends in the gold standard world, and gave them some competitive advantages due to undervaluation. In a world filled with price rigidities, he believes that depreciation is a less objectionable manner of meeting the difficulties of world depression than is deflation. He found that the abandonment of gold and the depreciation of the currency were accompanied by an expansion in world trade and an improvement in the cost-price structure within the countries that tried it. Because of the close trade relations among the countries that left the gold standard, their economic revival expanded the trade among themselves. Their capture of an increased share of the world's total trade was more the result of an expansion of trade with each other than a gain at the expense of the gold standard countries. Nevertheless, some gains were realized by paper standard countries at the expense of countries remaining on gold. Support for Harris' conclusions as to the beneficial effects of currency depreciation upon the internal economies of countries resorting to it is provided by the data appearing in Table 69. In the case of the United Kingdom, the United States, and Japan, exchange depreciation was accompanied by a marked improvement in production. France, which did not resort to depreciation during the period covered, failed to show any substantial improvement but rather experienced a further decline in production after a temporary improvement during 1933. Germany, which avoided depreciation of its currency by strong exchange-control measures, was able to show steady gains in production beginning in 1933. It was able to escape from the deflationary pressure of foreign debts by repudiating them and at the same time utilizing government spending as an instrument of recovery.

¹⁰ Harris, *Exchange Depreciation*, pp. xxii-xxiii.

TABLE 69

PRODUCTION AND EXCHANGE DEPRECIATION OF IMPORTANT COUNTRIES, 1931-1935 *

Ratio of Production of	UNITED STATES		UNITED KINGDOM		FRANCE		GERMANY		JAPAN	
	Produc- tion	Exchange Deprecia- tion	Produc- tion	Exchange Deprecia- tion	Produc- tion	Exchange Deprecia- tion	Produc- tion	Exchange Deprecia- tion	Produc- tion	Exchange Deprecia- tion
1931 to 1929.....	68.0%	0.0 %	83.8%	6.9 %	89.2%	0%	73.3%	8%	91%	2.0%
1932 to 1931.....	79.0%	0.0 %	99.5%	28.19%	77.5%	0%	83.1%	3%	106%	43.0%
1933 to 1931.....	93.8%	19.4 %	105.1%	31.9 %	86.5%	0%	93.6%	3%	125%	59.6%
1934 to 1931.....	97.6%	40.36%	117.8%	38.2 %	80.0%	0%	116.6%	1.4%	140%	64.4%
1935 to 1931.....	110.0%	40.60%	124.3%	40.2 %	74.4%	0%	138.7%	3%	152%	65.8%

* Harris, S. E., *Exchange Depreciation*, p. 174. Reprinted by permission of President and Fellows, Harvard College.

It is not entirely satisfactory to attempt to lump together all of the consequences of exchange devaluation and try to evaluate the final results in terms of advantages and disadvantages. There can hardly be any doubt of the advantageous effects of the abandonment of the gold standard during such a period of deflation as that of 1929-1932. With the abandonment of gold, there must be sufficient exchange depreciation to permit domestic prices to become stabilized. The widespread adoption of free paper currencies by important trading countries such as those comprising the Sterling Bloc might be expected to bring refreshing freedom from liquidation and deflation, which in turn would reflect favorably on the general world economy. But this argument for depreciation can have no valid connection, from the standpoint of world economic recovery, with depreciation aimed at undervaluation, for undervaluation in one country necessarily means overvaluation in other countries. Any departure of exchange rates from equilibrium is at least as deflationary in some quarters as it is inflationary in others. Actually, the deflationary effects seem to predominate when we remember that countries with overvalued currencies resort to increased tariffs, quotas, and other hindrances to world trade in self-protection.

CHAPTER XLII

WAR AND PRICES

The increase in governmental expenditures. The outbreak of war normally brings an almost immediate increase in the expenditure of the central government. Mobilization expenses must be met; troops and supplies must be transported; payrolls mount as increasing numbers of men are put under arms. Old training camps must be enlarged and new ones built; guns, munitions, airplanes, uniforms, food, and other equipment must be swiftly obtained; the navy must be strengthened. Strong nations frequently find it necessary not only to equip their own armies and navies, but also to assist in supplying the sinews of war to weaker allies. Only when the war is small in scale and of short duration can it be carried on without a marked increase in governmental spending.

The volume of governmental spending involved in a serious and prolonged war, therefore, creates difficult problems of public finance. This is true whether the government purchases its supplies in open competition with private individuals or whether it commandeers the operations of industry. One may visualize the seriousness of the problem of financing a war by observing the magnitude of the money expenditures of warring governments in the prosecution of the World War of 1914-1918. Such expenditures amounted to something over \$200,000,000,000. The United States, with an annual income before 1914 of about \$38,000,000,000, spent directly and in loans to its allies about \$17,000,000,000 (in prewar dollars). This means that during the 20 months we were at war, the government utilized for war purposes something like 25 per cent of the national income for the period. In other countries, the burdens were vastly greater. Translated into currency of prewar purchasing power, the total war expenditures of Great Britain were about twice the annual prewar income. Since it was highly unlikely that the national

real income of Great Britain underwent any substantial increase during the years of the war, this meant that about one-half of the national income of the war years was diverted from ordinary private consumption and investment into governmental spending. The same was true for Germany, while in France war expenditures were a little less than 40 per cent of the national income during the war years.¹ The war which began in September, 1939, constitutes as heavy, if not heavier, a drain upon the nations involved as did the war which ended in 1918.

Arguments for Financing Wars by Borrowing

The following arguments are commonly advanced for the use of borrowing to finance wars:

1. Taxation is too slow to enable the treasury to obtain necessary funds to meet the immediate needs. The levying and collection of new taxes involves a considerable amount of time, and war requirements cannot wait. Borrowing must therefore be used to bridge the gap between the time when funds are needed and the time when new taxes can be collected.

2. Actual fiscal requirements cannot be estimated accurately in time of war. War budgets commonly turn out to be too small. Therefore, in spite of a well-worked-out taxation plan, some resort to borrowing is generally necessary to supplement tax income in order to meet unforeseen requirements. Furthermore, borrowing the current money savings of the public is almost certain to prove too slow to meet the urgent requirements, and resort to an expansion in bank credit can hardly be avoided. To tie down expenditures during a war to the limits set by the government's ability to levy and collect taxes and to sell bonds to investors would be definitely undesirable. The cost of delay in a program of appropriate military action may easily be so great as to outweigh entirely the inflationary consequence.

3. Borrowing is justified on the grounds that the cost of the war may very properly be spread over a greater period of time than that involving the war itself. In the popular mind, borrowing permits passing on the burden of paying for the war to future generations.

¹ Colm, Gerhard, "War Finance," *The Encyclopædia of the Social Sciences*, Vol. XV, New York, The Macmillan Co., 1935, pp. 348-349. Also see *Readings in the Economics of War*, 1918, edited by J. M. Clark, W. H. Hamilton, and H. G. Moulton, p. 382, for data on the income of belligerent countries; and J. M. Clark, *The Costs of the World War to the American People*, New Haven, Yale University Press, 1931, Chapter III.

4. Psychologically and politically, it is more expedient for the government to borrow funds than to extract them by taxation while the war is in progress.

5. Taxation alone, without the help of borrowing and some inflation, cannot in practice raise sufficient revenue.

6. There is an advantage to be derived from the inflationary results of borrowing; namely, the increased utilization of the country's productive facilities. This is especially important when the outbreak of war occurs during depression, when unemployment is high.

Irrespective of the various arguments which can be raised for and against borrowing as a method of war finance, there is no escape from the fact that borrowing substantial amounts is inevitable in the conduct of a war. Even the totalitarian states, with their extraordinary coercive powers, have not succeeded in avoiding it. The importance of government borrowing in the United States during the First World War is shown by the decline in the percentage ratio of tax receipts to the total governmental expenditures (exclusive of public debt retirements).

<i>Fiscal Year</i>	<i>Per Cent of Tax Receipts to Total Governmental Expenditure ²</i>
1917	52.4
1918	26.5
1919	24.3

There can be little objection to the first two arguments listed above. Clearly, the smooth conduct of the war effort requires that an adequate supply of funds be available at all times. Borrowing in anticipation of tax revenue and to care for unpredictable requirements is normally carried out by the issue of short-term treasury obligations which are absorbed by the banking system. The result of such short-term borrowing is an expansion of bank assets and deposits and, therefore, an increase in the quantity of money and deposit currency.

Borrowing to postpone the cost of the war. That it is possible to postpone the economic costs of a war by resort to borrowing is a most flagrant economic fallacy which economists have been careful to refute. This argument easily captures the public fancy, since it is not hard to demonstrate that fighting a

² Mills, M. C., and Starr, G. W., *Readings in Public Finance and Taxation*, New York, The Macmillan Co., 1932, quoting a statement by Arthur A. Ballantine, Assistant Secretary of the Treasury, before the War Policies Commission, Washington, D. C., May 20, 1931.

war is bad enough for the present generation without the added indignity of having to pay for it. Clearly, it is physically impossible to use up munitions and other supplies of war that will be produced in the future; the only goods which can be consumed during a war are those in existence at the time. The sacrifice of the community is the same, whether these goods are paid for by taxation or by funds advanced to the government as loans.

It is, however, entirely possible to postpone part of the costs of war by borrowing *abroad*, for in such a case it is the future taxpayers who must shoulder the load of repayment. Furthermore, though probably not contemplated at the time, borrowing abroad has the possibility of permitting complete escape to the extent that war debts are eventually repudiated. There is the additional possibility that a vanquished foe may ultimately be compelled to pay part of the costs of the war. This provides a further argument for resort to the psychologically easier method of raising funds by borrowing. No one would claim that wars do not place grievous burdens upon future generations in the form of loss of man power and the wastage of capital equipment. This, however, has no connection with the question of the relative advantages of using borrowing instead of taxation.

The importance of the inflationary results of borrowing. Currency inflation, which is likely to accompany the use of borrowing to finance wars, serves two purposes. First, it stimulates production and, by leading to fuller employment of the productive factors, causes an expansion of output, from which the real costs of the war are met. This is an extremely important matter if there is any substantial slack in employment and in the use of industrial equipment at the time when the war or armament program is undertaken. Public policy requires that money incomes be permitted and even encouraged to expand up to the point where employment is as great as the supply of scarce essential war materials will permit, in order to bring to bear upon the war effort the full economic power of the country. Furthermore, some increase in prices of commodities needed for war purposes is required to stimulate production, particularly when the preceding period has been one of depression. Rigid restriction on credit and prices in the interest of a stable price index could hardly avoid doing considerable harm to the general employment situation. Second, it imposes forced saving upon the mass of income receivers. Inflation provides businessmen with larger profits. Part of these are windfall in nature, for they arise out of the lag in wages and other costs. In the hands of the

businessmen there is thus concentrated a large volume of income which the government can and does tap, both by the sale of bonds and by the levying of high taxes. Inflation, in other words, is a means of compelling the large mass of small income receivers to make sacrifices which ultimately contribute to the needs of war. To establish a taxing system to reach the small income receiver is very difficult, but inflation neatly accomplishes the job by forcing him to contribute indirectly. Of course, it is difficult to be certain that such a hit-and-miss levy as is imposed by inflation is fair and equitable, and there is always the danger that excess profits taxes and bond-selling campaigns may fail to extract an appropriate amount from the businessman, in whose hands these revenues are collected. Nevertheless, it is highly improbable that the task of mobilizing one-half of the national income for war purposes, as was done in Great Britain, could have been accomplished in a free economy without the aid of inflation.

Arguments against borrowing to finance wars. The objections to the use of borrowing to finance wars arise primarily out of the certainty of inflationary results. The objections to inflation, which are of course well recognized, are magnified in time of war. First, price inflation tends to lead to overexpansion in consumers' goods industries and tends to accentuate the already serious dislocations that inevitably accompany a shift from a peace to a war economy. The difficulties of a return to a peacetime basis after the war are thus increased. Second, inflation raises the dollar cost of carrying on the war, for it means that the government is bidding against private purchasers for necessary goods and forcing up the prices of such goods. This causes the tax burden to be proportionately heavier during the postwar period, when prices are almost certain to be lower. Third, inflation creates grave problems in the distribution of income. Windfall profits of business are fattened at public expense at a time when the common person is being called on to undergo heavy sacrifices in the interest of the successful prosecution of the war. Serious hardship results from lagging incomes of salaried persons, retired individuals living upon past savings, and, to some extent, wage earners. There is little assurance that taxation of business will be severe enough to prevent grave inequities in the national income distribution. Closely related to this is the question of the fairness of the distribution of the war costs.

The effect of war upon consumers. Some expansion of output accompanied our participation in the war of 1914-1918, and

to an extent offset the extra costs. This has led some to conclude that there was little if any decrease in the average standard of living in the United States during the war period. This does not mean, however, that no extra burden was placed upon the laboring class. Lagging wage rates meant that living standards were maintained only by overtime work and by expanding the number of employed persons (for example, women moved into industry in large numbers).³ But other studies lead to the conclusion that the war required not only an expansion in output but a reduction in consumption as well. Professor J. M. Clark found that, out of a net outlay of about \$32,000,000,000 for the war, about \$13,000,000,000 came from increased production during the war years, while about \$19,000,000,000 came out of decreased consumption.⁴

Granting that considerable sacrifice is necessarily involved in financing a war, the question which next arises is the allocation of the burden among the several parts of the economic community. It is pretty clear that sacrifice is required by all income receivers, both large and small. The problem that confronts those in charge of the fiscal policy of the government is to discover a workable and at the same time an equitable way to impose the necessary sacrifice upon the public. At first glance, taxation seems to offer the best solution, for it avoids hidden levies against incomes, which arise out of inflation. But the problem is complicated by the fact that, from a practical standpoint, some form of indirect tax—the sales tax, for example—must be relied on to tap the incomes of the poor. Nothing is certain about the fairness of such taxes even when combined with steeply graduated income taxes. Perhaps one can only say that such taxes are likely to prove somewhat more fair than inflation, which requires reliance upon the effectiveness of excess profits taxes to drain windfall profits away from the businessman.

Why borrowing is inflationary. Government borrowing has no inflationary effect so long as it results merely in the diversion of individual incomes from consumption to the purchase of government securities through voluntary saving, or in a shift from industrial investment to investment in government bonds. Such

³ Cf. Viner, Jacob, "Who Paid for the War," *Journal of Political Economy*, January, 1920. For the view that labor had to bear the bulk of the war costs, see Davenport, H. J., "The War-Tax Paradox," *American Economic Review*, March, 1919.

⁴ Clark, J. M., *The Costs of the World War to the American People*, 1931, pp. 281-282. For a general discussion of the problems of war finance, see Clark, Hamilton, and Moulton's *Readings in the Economics of War*, Chapter X.

diversions bring a reduction in the demand for consumption goods and private capital goods at the time when the demand for things needed by the government is increased. But when heavy war expenditures must be financed, the volume of government borrowing becomes too large to be obtained by the diversion of private spending and investments. Habits of investment cannot be changed overnight. It is next to impossible, without coercion, to persuade the public to curtail consumption or forego private investment and buy instead a volume of government bonds representing from one-fourth to one-half of the current national income. It becomes necessary, therefore, to rely upon commercial bank credit, directly or indirectly, for the absorption of the huge bond issues.⁵

Reliance upon bank credit to finance the sale of United States government securities during 1917-1919 took two forms. First, the banks themselves were expected to absorb their "quota" of new issues being offered. Pressure was brought to bear upon the bankers in order to assure satisfactory participation by their institutions. Second, individual purchasers were encouraged to subscribe to bonds in amounts beyond their current ability to pay and to make up the difference by borrowing at the banks on the collateral of the bonds. Banks were urged to lend to subscribers at rates no higher than the interest rate on the bonds. It was expected that subscribers to the bonds would be able to work off their bank loans out of income before the next issue was placed on the market, a process made easier by the credit inflation of which these borrowings were a part.

To make certain that bonds bearing low rates of interest could readily be sold, money rates were kept low by giving the banks access to reserve bank credit at favorable rediscount rates. Member banks were encouraged to rediscount "war paper" (customers' notes given to finance the purchase of government securities), whether received from the member banks' own customers or received from a nonmember bank. They were also encouraged to borrow at the reserve banks on 15-day collateral notes secured by government bonds.

Whether new bank deposits were created by the banks and directly credited to the government in payment for bank bond purchases, or whether such deposits were credited to customer borrowers and by them transferred to the government, the result was a net expansion in the volume of deposit currency. The

⁵ For a very good exposition of the relation between war finance and inflation, see Cassel, Gustav, *Money and Foreign Exchange After 1914*, New York, The Macmillan Co., 1922, pp. 9-18.

spending of these additional funds for the limited supply of commodities raised the price level. There tended to be a continuous increase in the volume of means of payment, interrupted only during the interval between the series of bond issues, when purchasers were digesting their expanded bond holdings by retiring part of their bank loans.

Some evidence as to the part played by bank credit in the flotation of the United States World War bond issues can be found in the report of the Federal Reserve Bank of New York for the year 1918 on the changes in loans and investments of 107 reporting member banks of the district. For these reporting banks, the volume of loans and investments, other than government securities and war paper, showed no increase during the year. Their holdings of government bonds, however, rose substantially, as did the volume of customers' paper secured by Liberty bonds.⁶

The importance of the part played by the Federal reserve banks in helping to finance the sale of war bonds is shown by the fact that the reserve bank discounts for member banks during the year 1917 increased by \$798,564,000, of which \$515,143,000 was commercial paper and \$283,421,000 was paper secured by government obligations. In the year 1918, "war paper," or paper secured by government bonds and issued to finance the trading therein, became the most important type of rediscounts. This is indicated in Table 70.

TABLE 70

TOTAL WAR PAPER AND TOTAL BILLS OF ALL KINDS DISCOUNTED BY ALL FEDERAL RESERVE BANKS DURING EACH MONTH OF 1918*
(In thousands)

	<i>War Paper Discounted</i>	<i>Total Bills Discounted</i>
January	\$ 378,507	\$ 868,230
February	400,036	762,445
March	315,116	754,934
April	1,806,669	2,172,580
May	2,523,506	2,993,019
June	2,621,132	3,137,226
July	2,469,385	3,343,458
August	3,127,333	3,762,259
September	4,077,897	4,685,140
October	5,308,282	5,903,963
November	4,601,248	5,154,597
December	5,760,969	6,215,083

* *Annual Report of the Federal Reserve Board*, 1918, p. 168.

⁶ *Annual Report of the Federal Reserve Board*, 1918, p. 369

Business inflation during war. War finance, carried on through the sale of bonds in the manner described above, is certain to result in a marked expansion in the means of payment and in a rise in prices. The inflation of currency in turn promotes an inflationary credit expansion arising within the business community itself. The growing demand for war supplies and the profits promised in their production and sale lead to private business borrowing. The rise in prices will not be confined to war materials alone. The expansion of credit to finance government borrowing leaves the volume of funds available for private spending largely unaffected. The competition for labor leads to higher wages, which in turn are reflected in the prices of consumers' goods. In the end, therefore, we find the cumulative and diffused effects of the increased demand for war materials appearing in the form of the boom phase of the business cycle. In the case of the United States in 1917-1918, the total effect of this demand was but a continuation of the expansion phase of the cycle, which began while we were still neutral.

The price inflation was augmented by the discount policy of the Federal Reserve System, which bowed before the pressure of the Treasury for the maintenance of easy credit conditions so that government borrowing might be carried on at low rates. The degree of inflation of prices that took place in important belligerent countries during the war years is shown in Table 71 and in Chart 38.

TABLE 71

INDEX NUMBERS OF WHOLESALE PRICES IN VARIOUS COUNTRIES BY YEARS*

(Average prices in July, 1913-June, 1914 = 100)

	1913	1914	1915	1916	1917	1918
England	102	102	128	162	209	231
United States	101	99	102	126	175	194
France	100	102	140	189	263	334**
Germany	102	103	137	...	...	...
Italy	105	102	142	189	...	...

* Mitchell, W. C., *International Price Comparisons*, 1919, pp. 18, 29, 31, and 43.

** For 2nd quarter, 1918.

The Position of Neutral Countries

The inflationary effects of war are not confined to the belligerents alone, for neutral countries are likewise infected by the inflation germ. In part, the inflationary pressure felt by neutrals arises from the necessity of strengthening their own military

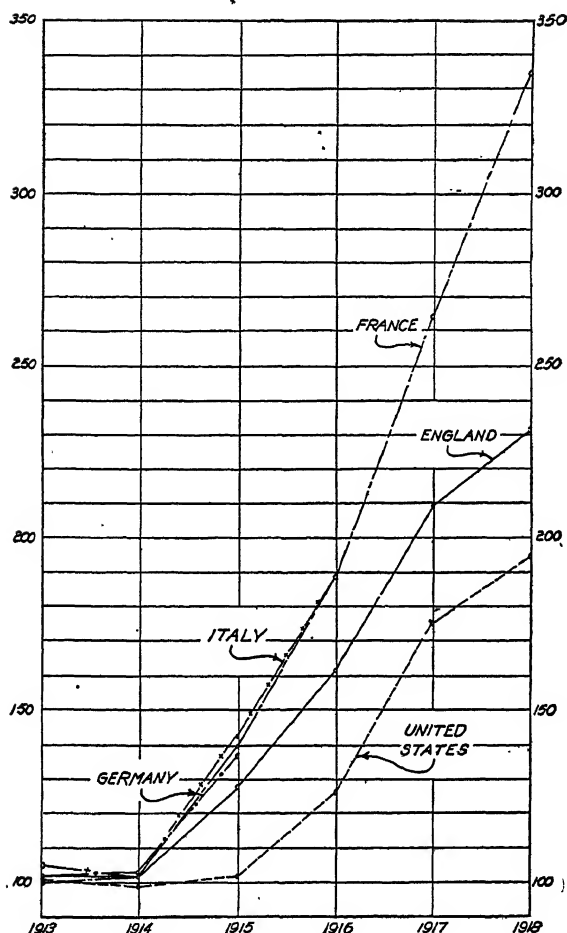


CHART 38. WHOLESALE PRICE MOVEMENTS IN IMPORTANT BELLIGERENT COUNTRIES, 1913-1918. Average prices, July, 1913 to June, 1914 = 100.

establishments. The expansion of the national budget for this purpose leads to the same results, though perhaps on a somewhat more modest scale, as does the expansion in expenditures by the belligerents. More important, however, are the inflationary effects arising from the expansion of exports to the belligerents. The latter, pressed for war supplies, call upon the resources of their neutral neighbors to assist in furnishing necessities for the war machine.

Inflation in neutral countries. Belligerent nations are unable and unwilling to expand their own exports sufficiently to pay for

their growing imports. Rather, the necessities of war will tend to produce an export shrinkage. Therefore, to establish in neutral countries credits with which to pay for imports, belligerents must either export gold, liquidate foreign securities, or borrow in the neutral countries. Each of these practices, accompanied by the increased demand for neutral countries' exports, tends to cause price inflation within the neutral countries.

To the extent that belligerents send gold to pay for goods purchased from neutral countries, the gold base of the neutrals' currency systems is expanded, bank reserves are increased, and the way is paved for credit expansion. When belligerents, in payment for war supplies, liquidate securities that are absorbed in the investment markets of the neutral countries, again the results are likely to be inflationary. Once the results of increased export demands are seriously felt, domestic capital requirements tend to absorb the bulk of domestic funds, so that resort to bank credit expansion becomes necessary to absorb the securities being sold by the belligerents.

But the sale of securities and gold to neutrals will not prove sufficient to provide the needed foreign funds. Belligerents, therefore, resort to borrowing in the neutral countries. The extension of credit then becomes a necessary feature of the continuance of a lucrative and stimulating export trade, and neutral traders must seek to accommodate their customers' credit needs. In the earlier stages, individual exporters may have to be content to draw time drafts upon the belligerent importers and to sell such drafts to their bankers in exchange for domestic bank credit. In self-protection, neutral bankers may require belligerent buyers to guarantee payment in the neutral country's currency, or at least to guarantee the rate of exchange at which claims in terms of belligerent currency may be converted into the neutral's currency. In exchange for arranging credits for the belligerents, bankers and neutral governments may insist upon imports of certain necessities that the warring countries are able to provide. To prevent undue depreciation and disorganization of exchange rates, belligerent governments have found it necessary to take a hand in establishing credits in neutral countries.⁷

Because the United States was the most important single neutral country during the period before its entry into the war in 1917, its experience throws some light upon the impact of war

⁷ For an account of the manner in which neutrals were induced to extend credit during the war of 1914-1918, see Cassel, *Money and Foreign Exchange After 1914*, pp. 12-18.

upon neutral countries. Between July 1, 1914, and July 31, 1918, the United States had a net excess of merchandise exports amounting to \$10,303,000,000. In settlement the United States received:⁸

\$1,043,000,000 in gold.

\$1,993,000,000 in repurchased securities.

\$1,500,000,000 in securities of belligerent governments sold to private investors.

\$6,029,000,000 in war debts to the United States Government after our entry into the war.

The rise in commodity prices in the United States was greater during the period of our neutrality than during the period of our belligerency. In July, 1914, just before the outbreak of the war, the wholesale price index stood at 99. Fifteen months later, it had risen only to 101. But in the year of October, 1915–October, 1916, prices increased from 101 to 133; and six months later, when we entered the war, they had risen to 171. During the last year and a half of our neutrality, prices advanced by about 70 per cent. But between April, 1917, and April, 1918, the first year of our direct participation in the war, wholesale prices rose only from 171 to 191, or about 12 per cent. Two reasons help to account for the slowing down in the rate of price increases after we entered the war. First, the extended period of neutrality had given time for a pretty complete adjustment to the production of war supplies before we actually entered the war. This was accompanied by a rapid expansion of our credit structure and a cyclical boom in business. Second, after the declaration of war, stern measures were taken to control prices of war necessities.

Abandonment of the Gold Standard During War

The gold standard no protection against war inflation. A common argument advanced in favor of the gold standard is that it affords protection against price inflation and monetary depreciation. This protection arises from the necessity of so limiting the volume of credit money as to insure its redemption in gold. In order to maintain redemption of its currency in gold, an individual country must not only maintain a suitable supply of gold reserves to meet current internal and external demands, but in addition must restrain credit and currency expansion so as to keep "in step" with other countries. Only by

⁸ Anderson, B. M., *Effects of the War on Money, Credit, and Banking in France and the United States*, 1919, p. 153.

so doing can it hope to retain the power to keep its currency on a par with gold.

During normal times, therefore, adherence to the gold standard gives some assurance that excessive inflation will be avoided. Even when inflation becomes world-wide, it is still unlikely that it will go beyond the bounds set by the customary or legal reserve ratios of the world's currency and banking systems. In time of war, however, these restraints are almost immediately thrown off by belligerent countries, and the outbreak of hostilities is a signal for a general abandonment of the gold standard.

Why war leads to the abandonment of the gold standard. To refuse to abandon the gold standard during times of war is to place an insurmountable barrier in the way of the credit expansion necessary for successful war finance. We have already seen that financing a war of serious proportions must inevitably be accompanied by some degree of credit inflation. If a belligerent were to attempt to retain the gold standard, a heavy and unendurable loss of gold would follow internal price inflation. The promptness with which belligerents abandoned gold in 1914 may be explained in part by the desire to husband their gold supplies. Both to satisfy legal requirements and to maintain public confidence, the gold reserves of the banking systems were largely maintained. Although the action obviously meant the throwing over of the real purpose of gold reserves, the abandonment of gold facilitated a bit of window dressing on the part of the banks that was deemed to be in the public interest. In spite of the fact that the gold standard was forced to give way before the superior needs of war finance, it still received lip service after its essential features had been abandoned. Central banks maintained gold reserves equal to their prewar holdings. Sometimes there remained the nominal right to convert currency into gold with an embargo on gold exports.⁹

The abandonment of gold after the outbreak of war in 1914. At the outbreak of the First World War in 1914, France immediately suspended the gold standard. Even before war was declared, banks in England had begun to refuse to pay out gold. Nevertheless, there was no actual legal abandonment of the gold standard in England during the war. In spite of the lack of a formal prohibition upon the export of gold, such action was in fact impossible without government sanction. Government con-

⁹ For a competent discussion of the abandonment of gold in warring countries and the maintenance of the pretense of the gold standard, see Cassel, *Money and Foreign Exchange After 1914*, pp. 1-8.

trol over all shipping prevented cargo space being made available for gold exports unless the government approved. In addition, the government held another effective instrument of control over gold movements in its power to withhold or grant war risk insurance, without which private gold shipments could hardly be undertaken. The gold standard was therefore effectively abolished by a series of administrative acts rather than by legislative enactment.¹⁰

Upon entering the war, even the United States felt it necessary to impose restrictions upon gold exports. An adverse balance of payments arose out of our imports of commodities from neutrals, so that during June, July, and August of 1917 we lost \$100,000,000 in gold. A Presidential proclamation quickly followed on September 7 which prohibited the export of specie except under license issued by the Federal Reserve Board acting under the supervision of the Secretary of the Treasury. Under these arrangements, gold exports were allowed only when needed to obtain necessary imports. In respect to this experience, the Federal Reserve Board said, "Foreign exchange rates have been abnormal throughout the year and in many of the countries which send us necessary materials, American bills are at a heavy discount, due partially to the restrictions placed on our export trade and partially to the adverse trade balance of countries associated with us in the war."¹¹ Our unwillingness to allow the free export of gold, however, must have been the immediate reason for the depreciation of the dollar in most cases. The one exception, growing out of the gold exclusion policy of Sweden, will be mentioned later.

Pegging the exchange rates. An early example of controlled exchange rates and the maintenance of an "official" exchange rate is available in the exchange-pegging experiences during the war of 1914-1918. Pegging of the exchange value of the pound in terms of dollars well illustrates the process. During the war, England developed an adverse balance of payments leading to a sharp depreciation of the exchange value of the pound. It was to avoid the increased costs of necessary imports as well as to escape the embarrassing results of exchange fluctuations that the British Government undertook its pegging operations.

To peg the value of the pound to the dollar at a fixed rate required the acquisition of a quantity of dollar credits sufficient to

¹⁰ Cf. Feavearyear, A. E., *The Pound Sterling*, London, Oxford University Press, 1931, pp. 302-307.

¹¹ *Annual Report of the Federal Reserve Board*, 1917, p. 22.

meet current adverse trade balances. To obtain these credits, the British Government shipped gold, liquidated British-owned American securities, and borrowed in the United States, first through private bankers and later from the government itself. By these methods the British Government was able to peg the pound at \$4.76. France and Italy likewise pegged their currencies in terms of the British pound by borrowing in England.¹²

Sweden's gold exclusion policy. In a vain attempt to escape excessive inflation, Sweden placed an embargo on gold imports during the First World War. It was in February, 1916, that the Riksbank asked the Swedish Government to relieve it of the duty to buy foreign gold. This exclusion policy was at first nullified by the importation of Norwegian and Danish gold coin newly minted from imported foreign gold, a practice that was permitted under the agreement of the Scandinavian Monetary Union of 1873. Later, in 1917, Denmark and Norway agreed to join the exclusion policy.

Because of the belief that goods which moved into Sweden were likely to find their way into Germany in violation of the blockade, the Allies restricted Swedish imports. At the same time, Allied purchases of Swedish goods expanded greatly. This meant that the rate of exchange on Sweden rose above the gold export point. But because gold could not move freely into Sweden to purchase Swedish currency, the dollar rate on Sweden rose above the gold parity rate. The exclusion of gold by Sweden was commended in some quarters as a clever way to prevent the value of the krona from depreciating with the depreciation in the purchasing power of gold. This might have proved true had the Riksbank taken pains to impose credit restrictions sufficient to check internal price inflation in Sweden. Failing in this, however, the Riksbank lost an opportunity to carry out a genuinely unique experiment in the maintenance of the value of a pure paper currency above the value of its gold equivalent. In actual fact, between the time when Sweden began its gold exclusion policy and December, 1918, wholesale prices in Sweden rose 125 per cent, while in the United States, which had the nearest approach to the gold standard of any country, prices rose but 87 per cent.¹³

¹² Cf. Feavearyear, *op. cit.*, pp. 307-309. For details of the method followed by the British Government in obtaining American securities for use in obtaining dollar exchange during the period of American neutrality, see McVey, Frank L., *Financial History of Great Britain, 1914-1918*, 1918, pp. 63-67.

¹³ For a more complete account of the Swedish gold exclusion experiment, see

The Avoidance of Price Inflation

The objectionable features of price inflation make it highly desirable that the inflationary results of war finance be minimized as far as possible. There are three avenues of approach to this problem. The first is the avoidance of an expansion of the means of payment. The second is by expanding output of goods wherever possible. The third is by outright control of prices. We shall examine each of these in turn.

The prevention of an expansion in the quantity of money. The most obvious way to escape monetary inflation is to avoid budgetary deficits by a prompt and drastic program of taxation. This, however, is the counsel of perfection which can hardly be followed by a government confronted by the gigantic task of marshalling its full resources for war. Assuming, then, that a government at war is almost certain to depend upon borrowing part of the funds which it needs, are there any ways to prevent such borrowing from becoming inflationary? It is possible to resort to some form of compulsory saving that will enable the government to borrow out of the current incomes of its citizens. One method is a drastic form of rationing of consumers' goods. This action, practiced in Germany since 1939, frees a large part of the consumers' incomes for investment in government securities. Government loans that are subscribed entirely out of income thus saved are strictly not inflationary. The same result may be accomplished in another way without dependence upon rationing of consumers' goods. Income payments might be diverted at the source; that is, part of an individual's income would not be paid in cash, but instead would be transferred directly to the government in exchange for government bonds, which would go to the individual in lieu of part of his cash income. In this manner, consumption would be curtailed and the remainder of the national income would pass directly into the hands of the government. The income receiver would receive a claim against future taxes in his government bonds. Professor Keynes has advocated such a plan.

In the absence of some such methods as those described above,

Cassel, *op. cit.*, pp. 58, 79-100. He states that the Riksbank's desire to be free from the obligation to buy gold at par arose from a wish to take advantage of the premium on kronor in the foreign exchange markets to buy gold and foreign exchange at lower prices. Another neutral, Spain, also adopted a gold exclusion policy when it suspended free coinage of gold and the purchase of gold by the Bank of Spain. Anderson, *op. cit.*, p. 161.

government deficits are almost certain to lead directly to some credit expansion. Even so, it is still possible and highly desirable to minimize the inflationary consequence by placing barriers in the way of private business inflation. One method of holding business investment in check is to maintain interest rates at a high level. Thus, new and speculative investment borrowing may be kept within due bounds, and some of the extreme, inflationary results of war finance may be avoided. But there are serious obstacles in the way of a high discount rate policy at such a time. First, the Treasury desires to float a large volume of government securities at as low a rate of interest as possible. Its influence, therefore, inevitably is thrown on the side of low rather than high interest rates. Second, there arises the question of the effect of high rates of interest upon the expansion of those industries necessary for the prosecution of the war. Any slowing down of necessary industrial effort is clearly undesirable. Therefore, however salutary the probable effect of high interest rates upon the nonessential industries, there is scant possibility of their adoption as a part of wartime policy. Inflation in the nonessential industries must therefore be held in check by other methods. Such methods include the rationing of capital and of materials. So long as the nonessential industries are not permitted to have access to the capital market or to purchase scarce materials needed for essential industry, they are not in a position to contribute greatly to an inflationary movement. Finally, the most important source of wartime inflation is unlikely to be seriously affected by a high interest policy. Whether interest costs are high or low, the government demands for borrowed funds to prosecute the war must be met. There is little reason to believe that voluntary saving will show any very marked response to higher rates of interest. Therefore, the net result of a tight money policy is likely to be an increased cost of financing the war with little restraint upon the expansion of money incomes. These considerations explain and to a considerable extent seem to justify the coolness of the Administration to general credit restriction policies in 1941.

The second important way to combat price inflation in the face of expanding money incomes is to encourage the expansion of output. War purchases are aimed at procuring an adequate amount of essential equipment and supplies. But there exist numerous restraints upon output which must be thrown off if maximum war effort is to be achieved. Among these restraints, the more obvious are: (1) control by monopoly which is reluctant

to expand its own capacity and prevents other firms from entering the field; (2) unnecessary restraints upon the mobility of labor, such as extortionate fees for union membership in the face of the closed shop; and (3) limitations on hours per week which labor may be employed without overtime pay at higher rates, which tend to limit the volume of industrial output in areas where a genuine labor shortage exists. These limits on working hours, imposed by law during depression to compel a spreading of work, should be suspended for the duration of the war emergency. Furthermore, tariffs should be reduced or abolished and the importation of goods encouraged wherever any shortage threatens.

Not only must the supply of war materials be increased, but also it is essential that consumers' goods be expanded so far as possible without jeopardizing the war effort. Especially is it desirable to expand the supply of nondurable goods, such as foodstuffs, clothing, and services which do not detract from the labor supply of the war industries. Ample supplies of agricultural products, for example, will go far to hold in check the increases in living cost. In the case of durable consumer goods, the case is different, for the producers of durable goods to a very considerable degree compete with war industries for scarce essential materials and to some extent can be switched into direct production of war supplies. Therefore, reduction rather than expansion in output of durable consumers' goods is in order. If price control is coupled with material priorities, the reduction in output of durable goods will do little harm to the price situation. Limiting the available supply of durable goods will tend to expand voluntary money savings available to the government and to some extent will relieve the necessity of resort to bank credit expansion.

The place of price controls in avoiding inflation. Because of the difficulty in imposing sufficient monetary restraints to escape inflationary price movements in time of war, direct control of prices has a special appeal. The general purposes behind price control are several. First, the control of prices of materials needed for essential war industries helps to keep down the cost of the war. In this way it reduces the size of government deficits and the degree of monetary inflation likely to result from these deficits. Second, the adoption of price control prevents scarce goods from rising sharply in price, and thus avoids the necessity of so large a volume of borrowing by private business. Here, too, a smaller volume of credit inflation results from the impos-

ing of price controls. Third, the fixing of maximum prices of consumers' goods protects the consumer from extortionate charges and releases more income for the purchase of government securities. Finally, *minimum* prices are sometimes fixed on certain scarce goods whose production may fall below requirements unless a sufficiently high price is guaranteed. The fixing of wheat prices during the First World War is an example of this.

The Control of Prices

The need for price controls arises out of the sharp expansion of government war expenditures. The behavior of prices in the face of war expenditures is well illustrated by the rise in prices which occurred after our entrance into the war in 1917. For example, the index of metals prices rose from 247 in March, 1917, to 333 in the following July, or 34 per cent in four months. The prices of foodstuffs rose over 17 per cent in the same interval of time, while wheat alone, which was the subject of acute demand from abroad, rose 30 per cent.¹⁴ Rapid and irregular price increases stimulated speculation and encouraged adventurous individuals to attempt to get control over stocks of goods and necessary industrial enterprises. Orderly business enterprise was discouraged. The sharp increases in prices of war supplies that followed the impact of large government buying tended to increase the cost of the war unwarrantedly. The rise in the cost of food and other necessities led to hardships upon the working population. Without some restraint upon the movement of prices, large windfall profits accrue to those fortunate enough to possess stocks of limited goods or facilities to produce scarce supplies needed by the government. A few are in a position to profit at the expense of the common good. But such "profiteering," as it is sometimes called, becomes highly unpopular. Although some decline in the standard of consumption must be imposed by the process of price inflation, public opinion requires that an attempt be made to hold prices in check.

The economic function of high prices. Rising prices of particular commodities for which demand has suddenly expanded serve the twofold purpose of stimulating output and directing available supplies to those willing and able to pay the highest price and, therefore, supposedly most in need of them. By causing an expansion in output, high prices not only encourage the utilization of any unused capacity that may be available, but

¹⁴ Baruch, Bernard M., *American Industry in the War*, 1921, pp. 70-71.

also will cause some diversion of factors of production from other uses, so that the capacity for producing scarce goods will be expanded. In spite of this, it is still possible to introduce price controls with favorable results. In many instances, the price increases that follow a sharp increase in demand due to war needs are considerably higher than those needed to furnish the required incentive to expand production. To the extent that this is so, part of the price increase has no economic justification as a stimulator of output. Moreover, it is possible to play upon the patriotism of producers and encourage an expansion of output along the desired lines without providing excessive profits from high prices. Wherever this is possible, it is desirable, in order to prevent windfall profits and the inflation of business incomes:

The war requires that goods be diverted from their ordinary peacetime uses to the degree necessary to provide adequate war supplies. Were the government to expand its purchasing power by taxation alone, the drop in consumer income would be sufficient force to cause such a diversion. But whenever some inflation creeps into war financing, it is undesirable that the government be required to bid up prices in order to accomplish the diversion. If the price system does not allocate industrial output, it becomes necessary to introduce another method. Administrative action is then required, in the form of priority orders, to determine which industrial plants are to receive first claim upon the available supplies. In this manner, it is possible to make sure that essential industries are not hampered by shortages due to the operation of nonessential industries.

Price control during 1917-1918. Even before the entry of the United States into the war in 1917, the President had been empowered by Congress to fix the prices of materials purchased for governmental use. Under the authority of this act, the War Industries Board and its subsidiary Price Fixing Committee operated to influence the prices of war materials save those of foods and coal. After the passage of the Lever Act in August, 1917, the control of foods was vested in the Food Administration and that of fuel in the Fuel Administration. Where the law did not confer authority to fix prices directly, it provided for the licensing of dealers for the purpose of controlling and limiting profit margins and of preventing speculative hoarding. Licensees were allowed to make only reasonable profits.

Those in charge of the administration of price controls endeavored, where possible, to obtain voluntary compliance with

their set standards of fair prices. Public opinion was also brought to bear where it seemed advisable. To encourage the production of wheat, a guaranteed minimum of \$2.00 per bushel was set, while millers and traders were limited to modest profit margins. In the case of a number of foodstuffs, consumption was restricted; "wheatless days" and a rigid rationing of sugar appeared. The packing industry was placed under license, and profits were limited. In the case of coal, prices were fixed to cover what were estimated to be the "bulk line" costs of production, or the marginal costs of the firms producing the bulk of the needed output in different areas. Dealers in coal were also limited in their profits. When the government was the primary purchaser of the thing whose prices were controlled, prices were often set by direct negotiation with the producers.¹⁵

In England a somewhat different method was used in respect to commodities needed by the government. There the government itself undertook to purchase the raw materials and fixed a margin to be paid for each stage of manufacture on the basis of actual cost and a fair profit. When raw materials were not purchased by the government, negotiations were carried on with trade associations to keep prices reasonable.¹⁶

Results of price control, 1917-1918. The results of attempts to control prices were not altogether satisfactory. Many instances of padding of operating costs and other evasions occurred. In the case of coal, prices allowed were inadequate to stimulate production, so that the country found itself with insufficient supplies of bituminous coal to care for the needs of the winter of 1917-1918. The result was a sharp curtailment in the use of coal for general purposes and the shutting down of industry when more production was badly needed.¹⁷ In spite of the failure of control to work perfectly, there is considerable evidence that it brought a fair measure of success. The extent to which control influenced price movements may be clearly seen by examining Table 72 and Chart 39.

¹⁵ For detailed studies of price control policies during the war, see Hardy, C. O., *Wartime Control of Prices*, Washington, D. C., Brookings Institution, 1940, and Garrett, P. W., *Government Control Over Prices*, 1920. For criticisms of the attempts to control prices, see Clark, Hamilton, and Moulton, *Readings in the Economics of War*, 1918, pp. 455-461, and Litman, Simon, *Prices and Price Control in Great Britain and the United States During the World War*, 1920, pp. 160-167.

¹⁶ Lloyd, E. M. H., *Experiments in State Control*, New York, Oxford University Press, 1924.

¹⁷ Litman, *op. cit.*, Chapter 7.

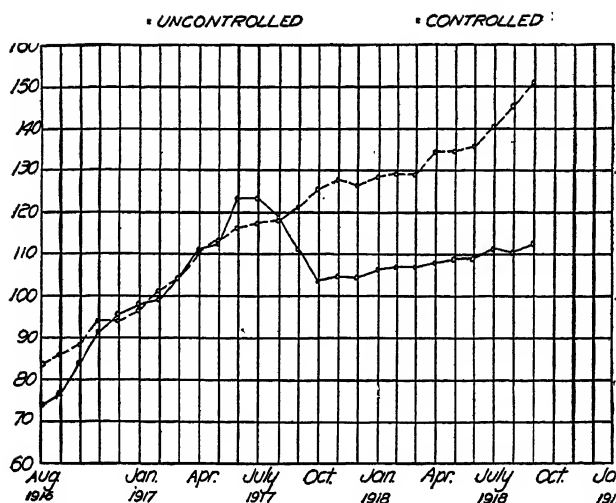


CHART 39. MOVEMENTS OF CONTROLLED AND UNCONTROLLED WHOLESALE PRICES IN THE UNITED STATES. Average prices, August, 1916 to July, 1917 = 100.

TABLE 72

MOVEMENT OF CONTROLLED AND UNCONTROLLED WHOLESALE PRICES IN THE UNITED STATES *

(Average prices August, 1916 to July 1917 = 100)

	Controlled Prices	Uncontrolled Prices		Controlled Prices	Uncontrolled Prices
1916:			1917:		
August ...	74	83	September	111	121
September	77	86	October ..	103	125
October ..	83	88	November	104	127
November	91	93	December	104	126
December	96	93			
1917:			1918:		
January ..	98	96	January ..	106	128
February .	99	101	February .	107	129
March	103	103	March ...	107	129
April	111	110	April	108	133
May	112	113	May	109	133
June	123	116	June	109	135
July	123	117	July	111	140
August ...	119	118	August ...	110	145
			September	112	151

* Litman, Simon, *Prices and Price Control in Great Britain and the United States During the World War*, 1920, p. 187. Quoted from the bulletin of the War Industries Board, *Fluctuations in Controlled and Uncontrolled Prices*, p. 8. The controlled price index was constructed from prices of 78 commodities that had been placed under control by September, 1918. The uncontrolled price index included prices of 193 commodities.

Price control was generally begun about August, 1917. Between August, 1916, and August, 1917, before price control was

instituted, prices of commodities subsequently to be placed under control rose 60 per cent, while the uncontrolled list rose 42 per cent. Between August, 1917, when control was instituted, and October, 1917, controlled prices fell 13 per cent and, although they later advanced moderately, in September, 1918, they were still over 5 per cent lower than in August, 1917. In contrast, the uncontrolled prices continued to rise. Between August and October, 1917, while controlled prices were falling 13 per cent, uncontrolled prices rose nearly 6 per cent, and by September, 1918, had risen 28 per cent over the figure for August, 1917. Of course, it would be foolish to deny that other factors might have intervened to check the rapid increase in prices. However, there is a *prima facie* case for the statement that control did modify the movement of prices very substantially. The influence, moreover, was not entirely limited to controlled prices, for the uncontrolled showed a much more modest rate of growth after control was instituted. This result is more surprising if we examine the limited coverage of price controls as they operated in September, 1918.

TABLE 73

NUMBER AND IMPORTANCE OF CONTROLLED AND UNCONTROLLED COMMODITIES AS OF SEPTEMBER, 1918*

	NUMBER OF COMMODITIES		RELATIVE IMPORTANCE	
	Con- trolled	Uncon- trolled	Con- trolled	Uncon- trolled
All Commodities	78	193	39.70%	61.30%
Farm Products	8	22	18.04	81.96
Food, etc.	10	77	28.22	71.78
Cloths and Clothing	18	34	41.35	58.65
Fuel and Lighting	8	6	66.44	33.56
Metals and Metal Products	19	6	83.33	16.17
Lumber and Building Materials..	9	21	55.71	44.29
Drugs and Chemicals	2	7	7.95	92.05
House Furnishings	0	5	.....	100.00
Miscellaneous	4	15	17.40	82.60

* Litman, Simon, *Prices and Price Control in Great Britain and the United States During the World War*, 1920, p. 188. Quoted from War Industries Board, *Fluctuations in Controlled and Uncontrolled Prices*, p. 3.

One may conclude that, with control instituted over the prices of commodities that felt the impact of war purchases, the inflationary pressure felt by consumers' goods and nonessential goods was decidedly reduced. The damping effects of control resulted in limiting the increase in the all-commodities wholesale price index to slightly less than 10 per cent during the 12-month

period August, 1917, to August, 1918, as compared to an increase of over 22 per cent in the 7 months preceding price control.

The problem of price control, after 1940. The defense program, with its vast expansion of governmental expenditures, which got under way in 1940-1941, plus the production of lease-lend exports, again placed the problem of control of prices squarely before the American public. Powerful inflationary influences were released by this program. For the fiscal year 1941, the Federal deficit amounted to 5 billion dollars, while the estimated deficit for the fiscal year 1942 was expected to be at least 12 billion dollars. The outbreak of war with Japan on December 7, 1941, and the entry of the United States into the world conflict vastly increased the need for government expenditures. All estimates of governmental deficits were sharply raised. With the announcement that annual government spending might exceed 50 billion dollars, the annual deficit was expected to reach 30 billion dollars. Late in 1941, approximately one-third of the outstanding Federal debt was in the hands of the commercial banks. If a similar fraction of the estimated deficit should go to the commercial banks, it would involve an annual expansion in bank credit of over 10 billion dollars. Meanwhile, private business firms expanded their commercial borrowing at banks under the pressure for funds to carry out defense orders. At the same time, the banking system was holding excess reserves of approximately 4 billion dollars after reserve requirements were raised to the maximum allowed by law. This constituted a continuous invitation to credit inflation. The Federal reserve banks, therefore, were out of contact with the money market and unable, if they desired, to impose a tight money policy upon the banking system. But even though it had been possible to impose a tight money policy at this time, such a policy would have been opposed on the grounds that it would tend to increase costs of government borrowing without restricting the volume of such borrowing. True, higher interest rates might be expected to increase somewhat the volume of voluntary saving, but it is unlikely that such saving would be substantial enough to reduce the necessity of government borrowing at the banks by an appreciable amount.

Two methods of price control have been advocated. One, advanced by Bernard Baruch, who had much experience with price control during 1917-1918, would impose a universal price "ceiling" upon all prices as of some chosen date.¹⁸ This method has

¹⁸ *Taking the Profits Out of War.*

the appeal of seeming fair to everyone and promising the most effective results. After the order to freeze all prices is in effect, adjustments upward and downward of individual prices would be permitted upon the consent of the price-fixing authority. This adjustment would be required to meet the varying situations which might appear in different industries and to correct injustices that might exist when the freezing order was put into effect. Such a plan has the further appeal that it would prevent the development of rising spirals of prices based upon increases in prices not under control. Criticisms of the plan to impose a general ceiling upon all prices are based upon several grounds. First, because of the wide coverage, the problem of administration would be exceedingly difficult. For many commodities, price quotations are difficult to get, and it is impossible to know the level of prices charged in a market at the time fixed for freezing of prices. The unstandardized nature of some commodities complicates the problem of price control, while the prices of contractors' services and wage rates obviously present difficulties. Revisions of price ceilings would require a tremendous expenditure of time and energy by the price administration. Because price ceilings call for allocation of commodities whenever a shortage appears, a general price ceiling would shortly put the government in the position of having to handle the allocation of everything, truly a tremendous task exceeding the talents of any price administration. Finally, enforcement of such a system of price ceilings would almost inevitably break down because of the multitude of individuals who would have to be policed.¹⁹

In contrast to the universal ceiling plan of price control is what may be called "selective" control of prices. Such a system would make no attempt to place all prices under control, but instead would be based upon the control of certain judiciously selected commodities. Commodities whose prices would be placed under control are those most exposed to the pressure of wartime spending and whose prices bear a significant causal relation to the prices of other commodities. In this manner, it is possible to bring effective control to bear upon the general level of prices without requiring detailed supervision over the whole range of commodities. This plan has the further advantage of retaining price flexibility among a large number of commodities, thus permitting economic forces rather than administrative order to regulate the flow of commodities into different

¹⁹ Cf. Hardy, C. O., *Wartime Control of Prices*, 1940, Chapter VI.

uses. Moreover, the experiences of the 1917-1918 period indicate that a system of selective price control can be made to work with reasonable success.

Postwar Price Movements

The end of the First World War, in 1918, was no exception to the general rule that the termination of hostilities is a signal for a general decline in prices. Between November, 1918, and February, 1919, the wholesale price index in the United States declined from 206 to 197. But this decline was short-lived. In March, 1919, prices began another upward swing, which continued until May, 1920, when the wholesale price index reached 247. Similar price movements occurred in most of the other industrial countries of the world.

The causes of the postwar inflation. The reason for the upsurge of prices after the momentary post-Armistice decline is to be found in large measure in the continuation of budgetary deficits in the countries that had so lately ceased fighting. Demobilization of armies of such proportions was necessarily slow. Many commitments made before the Armistice had to be carried out. The United States Government floated a \$4,500,000,000 Victory Bond issue during the first six months of 1919, and continued to borrow additional amounts during the latter part of the year. Easy money prevailed in the money markets. The Federal reserve banks rediscounted war paper freely at rates of less than 4 per cent. It was not until November, 1919, that the rediscount rate on war paper was raised by $\frac{1}{2}$ of 1 per cent, bringing the rate to $4\frac{1}{4}$ per cent. Added to the inflationary effects of government borrowing and easy money were the shortage of commodities, the release of price controls, and the reaction from the restraints and self-denials of the war, all of which conspired to generate a commodity price boom of startling proportions.²⁰

Out of the rise in prices primarily due to the continuation of government spending, there emerged a cyclical inflation. During the 15 months following February, 1919, wholesale prices rose 38 per cent in the United States. During the same period, prices rose 46 per cent in England, 60 per cent in France, and about 20 per cent in neutral Sweden. The price boom reached its peak about the middle of 1920. To the economic strains and

²⁰ For an excellent account of the relation of war to price movements, see Edie, Lionel D., *Money, Bank Credit, and Prices*, New York, Harper & Bros., 1928, Chapters XIV and XV. Also see Cassel, *op. cit.*, pp. 187-202.

maladjustments that had developed within the economic system, there was added the pressure of credit restriction. Finally, though belatedly, the central banks began to apply pressure in the form of higher discount rates. The Bank of England raised its rate to 6 per cent in November, 1919, and to 7 per cent in April, 1920. The Bank of France raised its rate from 5 per cent to 6 per cent in April, 1920. Having nearly reached the limits of its gold reserves, our Federal Reserve System raised the rediscount rate to 7 per cent.

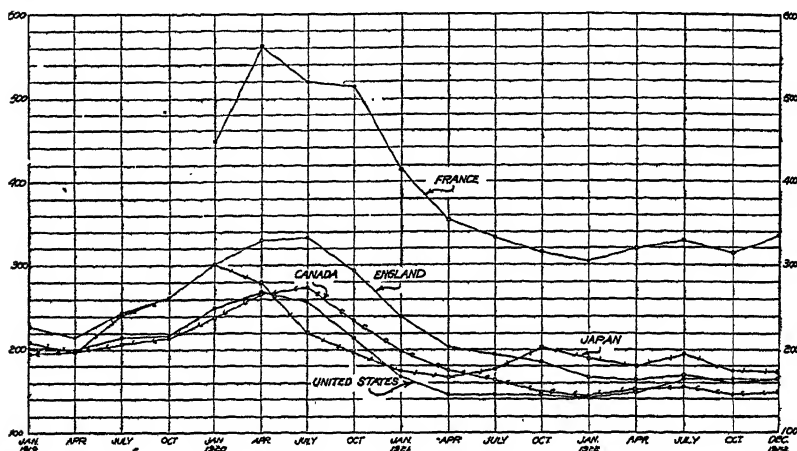


CHART 40. WHOLESALE PRICE MOVEMENTS, 1919-1922. 1913 = 100. Source: *Annual Report of the Federal Reserve Board, 1926, p. 202.*

The drop in prices after the middle of 1920 was severe, but short. Between May and December, 1920, wholesale prices in the United States declined 33 per cent. A year later, they had declined to 140, which was the turning point from which a cyclical improvement began. In Great Britain, prices declined from a peak of 336 in April, 1920, to 257 in December, and continued down to 170 in December, 1921. Similar movements occurred in France, Germany, Italy, Sweden, the Netherlands, Norway, and Denmark.

CHAPTER XLIII

RESUMPTION OF THE GOLD STANDARD AFTER THE FIRST WORLD WAR

INCONVERTIBLE paper currency was one of the heritages of the postwar world of the early 1920's. The gold standard had been abandoned by belligerents and neutrals alike. Even the United States, with its augmented gold supplies, prohibited gold exports except under license during its participation in the war. The abandonment of gold did not mean that the banking systems of Europe were divested of their gold reserves. On the contrary, in spite of the fact that over \$1,000,000,000 was sent to the United States, the gold reserves of European central banks were greater at the end of the war than at its beginning. This was possible because of the substitution of paper currency for gold in circulation. The care with which gold reserves were husbanded during the war is indicative of the esteem in which gold was still held. Substantial gold reserves were believed to help maintain public confidence in the currency even though the currency was inconvertible. It is not surprising, therefore, that the return to the gold standard occupied a central place among the monetary questions of the postwar years. The extreme inflation that occurred in Austria, Germany, and France after the war served still more to emphasize in the popular mind the desirability of seeking monetary stability in a return to gold.

Objections to a return to gold after the First World War. In spite of the widespread approval of a return to the gold standard after the First World War, there was some criticism of such a policy. Two years before England's return to gold in 1925, the eminent English economist, J. M. Keynes, argued that the desirability of a restoration of the gold standard was by no means clear. Although the gold standard could provide stability of exchanges, it was unlikely to provide internal price stability. An unstable external price level, under the gold standard, would

require instability of internal prices as well. If obtainable, stable internal prices seemed to him more desirable, even in a trading country such as England, than stable exchanges and unstable prices.¹

Deflation versus Devaluation as a Means of Re-establishing the Gold Standard

In the absence of the leveling effect of the gold standard, prices during the war rose unequally within the various countries. This inequality in the levels of prices in different countries persisted during the boom and subsequent collapse that took place in 1919-1921. By the end of 1922, the depression had worked itself out and a widespread improvement in world business conditions was under way. At this time, the United States alone maintained its currency on a gold basis. The immense importance of the United States in world trade and its tremendous financial and economic power made it necessary that other countries desiring to return to gold adopt a gold parity that would give them an equilibrium exchange rate in terms of the dollar. It was particularly important that "overvaluation" of the currency on the foreign exchanges be avoided. Otherwise, an adverse balance of payments would compel internal deflation and depression. During the early 1920's, the price level in the United States, as represented by the wholesale price index, was somewhat lower than prices elsewhere.

A country whose paper price level has risen substantially above prices in gold standard countries is confronted with two choices when it wishes to return to the gold standard. First, it may resume gold payments by converting its paper currency into gold at the pre-inflation rate. This choice, however, requires that prices be reduced sufficiently to make the new gold parity the equilibrium rate. Until such a price reduction occurs, the currency is overvalued in the foreign exchange market, exports languish, imports expand, and domestic industry is exposed to the depressive effects of plainly foreseeable declining prices. Thus, through depression of domestic industry, the price readjustment required by the return to the old gold parity may be accom-

¹ Keynes, J. M., *Monetary Reform*, New York, Harcourt, Brace & Co., 1924, pp. 167-169.

The general question of the relative desirability of gold and pure paper currencies will be examined in more detail in Chapter XLVII. For a discussion of the debate in England on the advisability of a return to the gold standard, see Brown, Wm. A., *England and the New Gold Standard*, New Haven, Yale University Press, 1929, Chapter X.

plished. The process will probably require restriction of credit by the central bank to hasten the process and to protect the country's gold reserves from an adverse balance of payments. The alternative procedure in returning to the gold standard is to recognize the fact that, at the new high level of prices, the equilibrium rate of exchange requires that the domestic currency be worth less in terms of gold currencies than before the inflation took place. If deflation is to be avoided, the gold content or value of the currency must be reduced by an appropriate amount to make the new gold parity correspond to the true equilibrium exchange rate. If "devaluation" is thus resorted to, a return to gold can be accomplished without deflation of the price level. The choice, therefore, is between "deflation" and "devaluation."

The case for devaluation. The relative merits of each course depends upon a number of considerations. If the inflation has been large, so that a return to gold will require heavy deflation of domestic prices, devaluation appears to be the better choice. This was the situation, for example, that confronted France in 1926, when its price index stood at about 700 (1913 = 100), while prices in the United States and England stood at about 150. The practical impossibility of deflating the French price level sufficiently to permit its return to the old gold franc is easily seen. Vastly more impossible would have been such an action in Germany in 1923.

The case for deflation. Arguments are not entirely lacking for a return to the gold standard by means of deflation of prices to a level corresponding to gold price levels abroad. For example, it is sometimes claimed that justice to the creditor class requires deflation in order to restore part, at least, of the purchasing power lost through the preceding inflation. Further, a restoration of a currency to its old gold value is advisable as a means of increasing a country's financial prestige. In postwar England, the argument was advanced that falling prices would benefit labor by decreasing the cost of living, and, in addition, would reduce the burden of paying foreign debts. None of these arguments is very convincing. The rights of pre-inflation creditors to restoration to their previous position by deflation is quite overcome by the disadvantages that deflation would heap upon the much more numerous debtor class that appeared during the war. The question of financial prestige seems to depend more upon short-run currency behavior rather than upon any long-run adherence to a particular gold parity. Finally, a country's economic well-being, and hence its ability to pay foreign debts, and

the real income of its laborers are more likely to be enhanced by stable prices than by deflation.²

If domestic prices in the paper standard country have already declined to a point not greatly in excess of prices within the gold standard countries, it may seem worth while to risk the modest deflation incidental to a return to the old pre-inflation gold parity. The prestige and psychological value of a return to the old gold parity may be considered sufficiently large to offset the losses attending deflation. During 1922 and 1923, the British wholesale price index was little if any above that of the United States, a fact that must have encouraged the later return of England to the old gold parity.

The Stabilization of the German Currency

Postwar inflation and the reparations. The tremendous problem of reparations confronted the weak and inexperienced German Republic that was created at the end of the war. Between 1919 and 1923, the governmental receipts averaged only 25 per cent of the expenditures, with the difference made up by short-term borrowing from the Reichsbank.³ By June, 1923, the government's floating debt stood at 10,275 billion marks.⁴ The vicious circle of exchange depreciation, rising prices, budgetary deficits, and currency inflation which arose out of the reparations transfers has already been examined in Chapter XXXIX.

Late in 1923, the currency situation became intolerable. Confidence in the paper mark was so completely destroyed that it was no longer used as a standard of value. Instead, prices of all goods came to be calculated in terms of stable foreign currencies, with the price in marks computed at the rate of exchange ruling at the moment. Both the flight of capital and the sale of marks to obtain foreign exchange for reparations depressed the exchange value of the mark still farther. Prices rose correspondingly, while currency in circulation lagged behind. Ultimately the German public came to refuse altogether to accept the paper mark, and barter and foreign currencies were made the basis of the highly dislocated domestic trade.

The Rentenmark. With the currency situation desperate, drastic measures were required to accomplish the needed reform.

² Cf. Keynes, *Monetary Reform*, pp. 160-166.

³ Angell, James W., *The Recovery of Germany*, New Haven, Yale University Press, 1932, p. 29.

⁴ Jack, *op. cit.*, p. 95. *Billion* is used here in the American sense of one thousand million.

Without outside help, and while the Ruhr was still occupied, the German Government took the necessary steps to establish a sound currency. On October 15, 1923, a decree established a new Rentenbank, which had power to issue a limited volume of new notes called *Rentenmarks*. The new bank had a capital of 3,200 million marks raised by compulsory contributions of business and industry. These contributions were in the form of mortgages or bonds equal to 4 per cent of the value of the property pledged as security. On the basis of these securities, the Rentenbank issued 5 per cent gold mortgage bonds, in which the new Rentenmarks were made redeemable. The Rentenmark was made equal to the gold mark (\$.238 in old gold dollars), and the old paper marks were made convertible into the Rentenmarks at the rate of 1 trillion to one, which corresponded to the foreign exchange value of the paper mark on November 20, when the conversion became effective. The tax system was reorganized on a gold mark basis in December, and the budget reached a balance by March, 1924. The Dawes plan, calling for a modification in reparations payments and a foreign loan, removed the pressure on the exchange value of the mark by requiring the German Government to accumulate reparations installments within Germany, with the burden of transferring the payment out of Germany without depressing the mark placed upon the Reparations Commission.

The Reichsbank was reorganized with power to issue notes against gold, foreign exchange, and short-term commercial paper. These notes were made legal tender and redeemable at the bank's option in gold coin or bullion and in drafts on foreign countries. Its legal reserve against notes was fixed at 40 per cent in gold or in gold deposits abroad. The new Reichsmarks replaced the Rentenmarks.

The Stabilization of the French Franc

Inflation after the war. After the First World War, France was confronted with the difficult problem of carrying out a large-scale reconstruction program to repair the ravages of the war. It was hoped at the time that a sufficient volume of reparations eventually would be forthcoming from Germany to meet the expenses of the reconstruction. This encouraged the financing of the program by borrowing rather than by taxation. Between 1919 and 1924, the governmental deficit was 171,800 million francs, a substantial part of which was made up by borrowing at the Bank of France, with direct inflationary results. At the be-

ginning of the year 1926, the advances of the Bank of France to the government amounted to about 36,000 million francs, or nearly three times as much as at the beginning of 1918.⁵ A weak spot in the debt structure that survived the end of the war were the *bons de la défense nationale*, which amounted to 46,000 million francs at the beginning of 1926. These were short-term issues that matured in substantial volume each month and constituted a continuous threat to the government finances. A loss of confidence in these securities and a failure of their holders to reinvest in new issues on the maturity of the old compelled the government to seek other sources of funds.⁶

The exchange value of the franc declined, first as a result of internal depreciation which accompanied inflation, and later as a result of a flight of capital induced by speculative considerations. In this later stage, the exchanges depreciated ahead of the internal price and currency movements. Exchange on New York was selling at 13.7 francs per dollar at the end of December, 1922. On July 20, 1926, the franc had fallen to a low of 49.2 francs per dollar.⁷

De facto stabilization. The extraordinarily weak position of the French budget in 1924-1926 made for serious difficulty in stabilizing the external and internal value of the franc. Until a balanced budget became a possibility, the threat of internal inflation, with its accompanying flight of capital, could not be dispelled. But a tax program sufficiently severe to insure a balanced budget constituted a political problem of the first magnitude. Moreover, a funding of the existing mass of short-term obligations was needed to reduce the threat to the budget from that quarter. Further, the *rentier* class, which had suffered heavy losses during the inflation, objected to stabilization at the existing stage of depreciation, preferring, quite naturally, a lowered price level.⁸

The strong position taken by Poincaré when he became premier in July, 1926, brought about a marked improvement in the monetary situation of France. Taxes were increased and the budget was brought into balance. The amortization of the short-term debt was begun. The Bank of France was able to add substantially to its supply of gold and silver through its

⁵ Jack, *op. cit.*, pp. 115-117.

⁶ Dulles, Eleanor, *The French Franc, 1914-1928*, New York, The Macmillan Co., 1929, pp. 185-186.

⁷ Dulles, *op. cit.*, p. 477.

⁸ Dulles, *op. cit.*, pp. 412-413.

authority to purchase such metals at a premium corresponding to their current value. Under the beneficent influence of the Poincaré government, the franc rose from a low in July, 1926, of 2.03 cents to about 4 cents in the following December. The appreciation of the exchange value of the franc following the crisis of July, 1926, was accompanied by a sharp decline in prices. The wholesale price index fell from 854 in July to 641 in December of the same year, accompanied by a slowing up of business activity. But most important was the sharp reversal in the flight from the franc.⁹ The appreciating franc led to a repatriation of capital in large volume, and the Bank of France was able to purchase large reserves of foreign exchange in return for its own note issue.

The undervaluation of the franc. After the *de facto* stabilization of the franc in 1926, its exchange value fluctuated within narrow limits about a value of approximately 4 cents. The free purchase of foreign exchange by the Bank of France prevented still further appreciation in the franc's value. It was not until June 25, 1928, that the franc was legally stabilized in terms of gold by giving it a statutory value of 3.93 cents. The old rule, fixing a maximum for the note issue of the Bank of France, was removed and the requirement of a 35 per cent gold reserve against deposits and notes substituted. Redemption of notes might be in gold bullion or coin at the option of the bank.¹⁰

The stabilization of the franc at 3.93 cents appears to have undervalued the franc somewhat. Two indications point to this conclusion. First, the calculated purchasing power parity rate was somewhat higher than 3.93 cents. In August, 1927, the calculated rate based upon relative price levels was 4.5 cents, indicating an undervaluation of about 14 per cent. The unreliability of such calculations, however, leads one to view with suspicion conclusions based thereon. Fortunately, there is corroborating evidence to be had in the appearance of an unusually favorable balance of trade after stabilization.¹¹

England's Return to Gold in 1925

After the collapse of the postwar boom in 1920, the English wholesale price level was stabilized at a point roughly 50 per cent above the prewar level. On May 13, 1925, England re-

⁹ Dulles, *op. cit.*, p. 510.

¹⁰ *Federal Reserve Bulletin*, 1928, pp. 570-575.

¹¹ Dulles, *op. cit.*, pp. 527 and 535.

The Return to the Gold Standard in Other Countries

By 1929, many of the smaller countries which abandoned gold during the war had restored some form of the gold standard. Austria stabilized its currency in 1922 and established the gold exchange standard. Sweden restored its currency to its old gold parity in 1924. It was followed in 1925 by Australia, New Zealand, the Netherlands, the Dutch East Indies, and South Africa. Belgium restored the gold standard in 1926, when it established a new gold monetary unit called the *belga*. Italy returned to gold by the devaluation route in 1927, and Denmark restored its gold currency the same year. Norway re-established the gold standard in 1928, followed by Czechoslovakia in 1929.

there was, moreover, a marked difference between the behavior of costs in the so-called sheltered and unsheltered industries. But the return to gold in 1925 itself required the reduction of sterling prices and, consequently, of money costs of production to an extent which is variously estimated. At any rate, the actual situation which was disclosed in the years following the return to gold marks that step as the beginning of a new series of difficulties for our trade and industry. Whatever the disequilibrium between costs and prices which still existed in 1924, it was seriously accentuated by the adjustment of sterling prices to gold prices. If gold prices had continued to rise, as they had been rising just previously, those difficulties would have largely vanished; as it was, gold prices fell and the hopes then entertained in that respect were disappointed."

For an impartial discussion of the question of whether or not the pound became overvalued on the return to gold in 1925, and a consideration of the difficulties which confronted the British export trade, see Gregory, T. E., *The Gold Standard and its Future*, New York, E. P. Dutton & Co., 1932, pp. 42-48.

CHAPTER XLIV

THE ADEQUACY OF THE GOLD SUPPLY

WITHOUT question there is some relation between the supply of gold and the general level of prices in a gold standard world. Whether one accepts the commodity theory or the quantity theory of money, an increase in the supply of monetary gold, relative to the volume of production and trade, will tend to cause a long-run increase in prices. A relative shortage in the monetary gold supply, on the other hand, will result in falling prices.¹ Anyone concerned with the consequences of secular price trends in a gold standard world, therefore, cannot be indifferent to the question of the relative gold supply.

The return to the gold standard by all of the important industrial countries of the world after the First World War raised the question of whether or not the monetary gold supply was adequate to support the existing price level. In 1925, when England returned to gold, wholesale prices in the United States stood at a level approximately 50 per cent above the 1913 level. Could this price level, which might be taken as representative of gold prices in the world at large, be maintained in the face of the rising gold requirements of countries newly returning to the gold standard? The seriousness of this question was recognized in the Report of the Financial Commission of the Genoa Conference of 1922, which advocated (1) the return to gold, with the aid of outside loans to weaker countries where necessary, (2) an international convention to "centralize and co-ordinate the demand for gold" so as to prevent the undesirable effects on prices that might result from competition of countries for gold reserves, and (3) the use of the gold exchange standard or an international clearing system as a means of economizing the use of gold.² Fur-

¹ For a detailed survey of the relation of the long-run or secular trend of prices to the supply of money metals, see Edie, Lionel D., *Money, Credit, and Prices*, New York, Harper & Bros., Chapters X and XI.

² Mills, J. Saxon, *The Genoa Conference*, Appendix V, pp. 361-365.

ther evidence of the serious interest in the question of the gold supply during the relatively stable price period of the 1920's is seen in the action of the Financial Committee of the League of Nations, which appointed a Gold Delegation early in 1929 to "examine into and report upon the causes of fluctuations in the purchasing power of gold and their effect upon the economic life of the nations."

Basically, the interest in the sufficiency of the gold supply goes back to the belief, widely held, that the long-run trend of prices is of great importance in determining economic well-being. More particularly, it is believed that a long-run declining level of prices is detrimental because it tends to result in longer periods of depression and shorter periods of prosperity than occur under stable or rising prices. If this positive relation between falling prices and the length of depressions is a real one, then it is vitally important that we know something about the probable trend so that appropriate measures may be taken to guard against undesirable results. We have already had occasion to examine the validity of the assumption that falling prices promote depressions when we considered the effects of price changes in Chapter XXX. Regardless of any doubts that may be raised about the belief that long-run falling prices are undesirable, the relation between the monetary gold supply and the price level is worthy of study in connection with any discussion having to do with the future of the gold standard.

The Gold Required for Long-Run Price Stability

Estimates of the secular trend of production and trade. One method of estimating the gold supply needed to provide long-run price stability is based upon a calculation of the secular trend of growth of world production and trade. To this may be applied the familiar equation of exchange, $MV = PT$, which indicates that, if V is stable, long-run stable prices require that M should increase just as fast as T —hence the importance of calculating the normal trend of T . Professor R. A. Lehfeldt estimated the annual rate of growth of world production at about 3 per cent. Allowing for a long-run growth in the use of paper and credit substitutes for gold, he estimated that the supply of monetary gold ought to increase at the rate of about $2\frac{1}{2}$ per cent per year in order to offset the increase in production and trade and to provide long-run price stability.³

³ *Gold, Prices, and the Witwatersrand*, 1919, pp. 30-34.

The supply of gold required for secular price stability: Cassel's calculation. Cassel attempted to measure the quantity of gold required to provide long-run price stability by discovering the annual rate of increase in the gold supply that had sufficed in the past to maintain a given level of prices. He chose the dates 1850 and 1910 as a basis for his calculation, because at these two dates, as well as in the intervening year of 1887, Sauerbeck's index of English wholesale prices stood at the same level. He reasoned that, since the gold supply in existence at those two dates was presumably sufficient to maintain that level of prices, the rate of increase in gold between those dates must have been equal to the secular increase in the need for gold. Therefore, a computation of the annual rate of increase in the gold supply between those dates ought to indicate the annual rate of increase needed to provide long-run price stability.⁴

Beginning with an estimate of the total world's gold stocks as of 1850, Cassel computed the total gold stock in 1910 by adding to the 1850 estimate the annual production minus .2 per cent of the total stock for annual wear and wastage. The compound annual rate of increase in the world's gold stock during the 1850-1910 period averaged 2.79 per cent. Thus, he concluded that it would have been necessary for the total gold supply of the world to increase by about 2.8 per cent each year during the 1850-1910 period in order to maintain a stable level of prices. Actually, of course, the increase was irregular and was accompanied by fluctuations of prices. Allowing .2 per cent for waste and other loss, he concluded that, if the annual production of gold amounted to 3 per cent of the total stock of gold, long-run price stability would result. To test his conclusions, he compared the actual output of gold with the amount required to represent an annual increase of 2.79 per cent. He compared the fluctuations in wholesale prices with the ratio of the actual gold output to the computed "normal," and found (1) that "annual variations of the general price level have no connections at all with the supply of gold" and (2) that "secular variations of the general price level correspond closely with the contemporary variations of the relative stock of gold."⁵ He further concluded that this "normal" rate of increase in gold, using "normal" to mean the amount needed to give stable prices, corresponds to the secular trend of

⁴ Cassel, Gustav, *Theory of Social Economy*, New York, Harcourt Brace & Co., 1924, pp. 441-454. Also see his "Supply of Gold," in the League of Nations, *Interim Report of the Gold Delegation*, 1930.

⁵ *Interim Report*, p. 73.

economic progress. But the fact that the secular price level was above the relative stock of gold from 1850 to 1880 and below it from 1880 to 1900 indicates to him that the secular trend of economic progress was not uniform. Further, he believes that the decline in prices below the relative gold supply in the period of 1880-1900 was in part due to the abandonment of bimetallism and the adoption of the gold standard by important European countries during that interval, and also to the heavy demand for gold in the United States following the resumption of specie payments in 1879.⁶ Graphic portrayal of Cassel's findings appears in Chart 41.

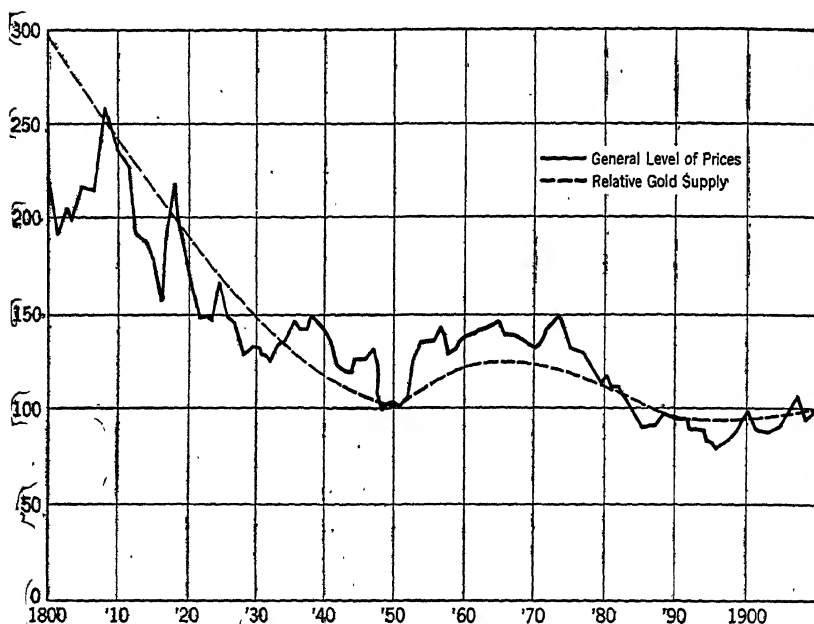


CHART 41. RELATION OF THE RELATIVE GOLD SUPPLY AND THE GENERAL LEVEL OF PRICES. Source: *Interim Report of the Gold Delegation*, The League of Nations, 1930.

Some criticisms of Cassel's estimate of the "normal" gold supply. A number of criticisms have been made of Cassel's conclusions in respect to the normal gold supply required to provide stable prices. First, there is the question as to whether the wholesale price index upon which Cassel based his calculation is sufficiently representative of the whole price structure to be of any real significance as a measure of desirable price stability.

⁶ *Ibid.*, pp. 74-75.

The dispersion among the various price indexes indicates that this is no idle question. At best, Cassel's findings relate only to the stability of wholesale prices. Second, his choice of the years 1850 and 1910 as years with the same price levels has been criticized. Because Cassel's calculations necessarily deal with the trends of prices rather than with the prices of any particular year or years, care must be taken to find dates for which the trend prices are the same. But the prices that Cassel uses as representative of the years 1850 and 1910 are the averages of prices for the years 1848-1851 and 1908-1911, respectively, rather than the trend value of wholesale prices for those years. The trend price for 1850 has been estimated at 84 instead of the 76 that Cassel found by averaging the actual prices for the years 1848-1851. The trend price for 1910 has been estimated at 79 instead of the 76 that was the average of actual prices for the years 1908-1911.⁷ Furthermore, because gold output admittedly does not affect prices immediately, but only after an unknown time lag, the validity of comparing price behavior with the changes in output of gold during any particular period may be seriously questioned. Yet another objection to Cassel's estimate rests upon his use of the *total* world gold supply instead of the monetary supply. To the degree that the various non-monetary uses of gold fail to leave a fixed proportion of new gold available for monetary uses, the correctness of his estimate is lessened.

Finally, the whole basis of Cassel's estimates may be challenged on the grounds that, during the early part of the period between 1850 and 1910 for which he calculated the compound annual rate of increase of the gold supply, silver played an important part in many of the monetary systems of the world. In 1850, some European countries were on the silver standard, while others were on the bimetallic standard. By the end of the period, 1910, all of these countries had shifted to the full gold standard. This means that the 2.7 per cent annual rate of increase in the supply of gold that occurred during the period was more than sufficient to merely maintain the supply of money at the point where prices would be stable. For out of this 2.7 per cent, gold was provided to replace the silver that was demonetized, as well as to supply the necessary increase in the total monetary supply. On the other hand, this period saw some very substantial increases in the efficiency with which gold was being utilized in the world's

⁷ Pinney, J. T., "Gold Production and the Price Level: The Cassel Three Per Cent Estimate," *Quarterly Journal of Economics*, 1933, Vol. 47, pp. 647-679.

monetary systems. For example, it is estimated that between 1882 and 1913, the ratio of gold in the United States to the sum of individual deposits in banks and currency in circulation declined from 12.1 per cent to 9.8 per cent, or a net saving of about 19 per cent. During the same period, the ratio of the Bank of England's gold to its notes and deposits declined from 40.9 per cent to 34.6 per cent, a saving of about 15 per cent.⁸ These growing economies reduced the need for gold and, had they not appeared, the annual increase in gold required to maintain level prices would have been somewhat larger than 2.79. Unfortunately, there is no very good way to calculate and evaluate the results of these conflicting influences. The shift away from bimetallism and silver standards is not likely to be an influence in the future. The possibilities of further economies in the use of gold undoubtedly have not been completely exhausted, but the rate of their introduction is highly uncertain.

Kitchen's estimate of the monetary gold supply needed to give stable prices. A refinement of Cassel's method was introduced by Mr. Joseph Kitchen, who computed the compound annual rate of increase in the *monetary* gold stocks between 1850 and 1910. He reached the conclusion that it was necessary for the stock of *monetary* gold to increase annually at the rate of 3.096 in order to maintain stable wholesale prices.⁹ His method has the added appeal of dealing directly with the supply of monetary gold instead of the total gold supply. However, for evaluating the probable effects of future gold production upon prices, his method is somewhat complicated by the necessity of calculating the fraction of the annual gold production that will be diverted into the arts and into Oriental hoarding.

On the basis of a 3.1 per cent normal rate of increase in the supply of monetary gold, Kitchen computed the "relative gold supply" $\left(\frac{\text{normal stock of gold}}{\text{actual stock of gold}} \right)$ and compared it with the changes in prices. The results of this comparison may be seen in Chart 42.¹⁰

⁸ Edie, Lionel D., *Money, Bank Credit and Prices*, New York, Harper & Bros., 1928, p. 264.

⁹ "The Supply of Gold Compared With Prices of Commodities," League of Nations, *Interim Report of the Gold Delegation*.

¹⁰ Supporting the conclusions of Cassel and Kitchen, Edie, on the basis of a detailed study of the relation of the stock of monetary gold to prices, concluded that the "normal" rate of growth of monetary gold stocks before 1884 was approximately 3 per cent per year, while after 1884 the requirements tapered down to about 2.7 per cent. *Money, Bank, Credit and Prices*, pp. 252-253.

Wilcoxon and Hardy's estimates of the "normal" monetary supply. Using a different series of dates, 1804 and 1924, during which wholesale prices were at the same level, Wilcoxon estimated the rate of increase of the combined monetary gold and silver stocks, and found it to be 1.414 per cent annually.¹¹ Using Wilcoxon's data, Hardy calculated the rate of increase of the combined monetary gold and silver stocks between the years

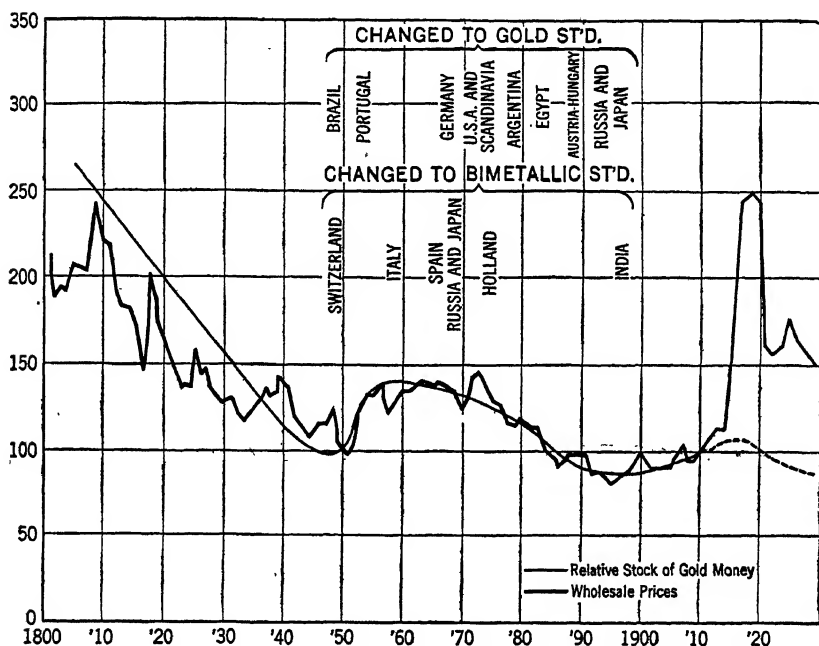


CHART 42. THE RELATIVE STOCK OF GOLD MONEY AS COMPARED WITH WHOLESALE PRICES. Source: *Interim Report of the Gold Delegation*, The League of Nations, 1930.

1849 and 1909, and found it to be 1.46 per cent per annum.¹² Hardy's estimate, which does not cover the abnormal war period that Wilcoxon's does, appears to be the most reliable calculation

¹¹ Wilcoxon, L. C., "World Prices and Precious Metals," *Journal of the American Statistical Association*, Vol. 27, 1932, pp. 129-140.

¹² Hardy, Charles O., *Is There Enough Gold*, Washington, D. C., Brookings Institution, 1936, p. 32. This study is a comprehensive survey of attempts to determine the rate of increase in monetary stocks needed to give long-run price stability.

For a calculation somewhat similar to those of Hardy and Wilcoxon, see Mlynarski, Feliks, *The Functioning of the Gold Standard*, Boston, World Peace Foundation, 1931.

of the "normal" rate of increase in money metals needed to provide stable prices.

Are these estimates of any practical value? Estimates of the "normal" gold supply can hardly be expected to have any application to the problem of the proper rate of increase of a managed currency supply within one country alone. To what extent, we may properly ask, do they throw light upon the question of the prospective long-run price trend under an international gold standard and the question of the supply of an international money needed to provide stable future prices? In answering these questions, we must remember that the data upon which these calculations are based are necessarily inaccurate. Furthermore, the mere fact that any given rate of monetary increase is found to have been sufficient to cause or permit prices of one year to be duplicated 60 years later is no proof that this rate of increase would actually have maintained a stable price level between those two years. Such an assumption would be warranted only in case the rate of increase in production and in monetary needs had progressed regularly through the years, which is unlikely to have occurred. Finally, the projection of a past "normal" rate of monetary increase into the future is highly speculative because of (1) the uncertainty as to the future trend of economic progress and monetary needs and (2) the uncertainty of the extent to which new economies in the use of gold will duplicate the appearance of economies of the past. One must conclude, therefore, that estimates of the "normal" gold supply cannot implicitly be relied upon either to measure future world monetary requirements or to forecast future price trends in a gold standard world. Only as such estimates are carefully adjusted in the light of the probable secular growth in trade and economies in the use of bank credit are they likely to prove of much use.

*The Relation of the Gold Supply to the Fall
of Prices After 1929*

The decline in world prices after 1929 provided incentives for further attempts to find a causal relation between the quantity of gold and the behavior of prices. These attempts fall under two main heads: (1) those involving the belief that, in the aggregate, the gold supply was insufficient to maintain the postwar price level and (2) those involving the belief that the decline in prices was caused by a maldistribution of a gold supply otherwise adequate. Both of these explanations deserve attention.

Warren and Pearson's requirements for secular price stability. Professors Warren and Pearson made an impressive attack upon the idea, current during the 1923-1928 period, that the post-war price level was stable and might be expected to continue so long as new monetary gold supplies were adequate to care for the secular trend of production. It was their view that the 1923-1929 price level could not be maintained, and was therefore followed by a return to the prewar level. The reasons for this belief rested in part upon analogous price movements after the Napoleonic wars and the Civil War.¹³ In addition, their statistical studies of past relationships between the supply of gold production and prices lent support to this view. In their study of the relation of gold to prices, Warren and Pearson advanced the theory that the gold supply of 1928-1929 was, by statistical measurement, insufficient to maintain the existing price level, and that the return to prewar prices as soon as the gold standard had been generally restored and the "demand" for gold had returned to normal was therefore inevitable. The proof advanced for this thesis was an analysis of the historical relationship between the monetary gold supply, the volume of production, and wholesale prices.

For each year from 1839 down to 1931, Warren and Pearson constructed index numbers of: (1) the world stock of monetary gold, (2) the world's physical production, and (3) English wholesale prices. The movement of these index numbers convinced them that during the 75 years preceding the First World War, stable English wholesale prices, representative of world prices, required a rate of increase in the world's stock of monetary gold equal to the rate of increase in the world's physical volume of production. Whenever the stock of monetary gold increased at a faster rate than did physical production, prices rose. Whenever the gold stock increased more slowly than the physical volume of production, prices fell. In other words,

Gold

$$\frac{\text{Physical Volume of Production}}{\text{Monetary Gold Supply}} = \text{Prices.}^{14}$$

Like Cassel and Kitchen, they found the necessary annual rate of increase in the world's monetary gold supply required for stable prices to be about 3 per cent (3.15 per cent, to be exact). The data supporting this conclusion are most convincing at properly chosen dates. For example, in 1850, when the ratio of monetary gold stocks to

¹³ Warren, George F., and Pearson, Frank A., *Prices*, 1933, pp. 117-123.

¹⁴ *Ibid.*, pp. 80-81.

the physical volume of production stood at 105 (1880-1914 = 100), the index of English wholesale prices stood at 105. In 1870, when the gold-production ratio was 136, prices were 131. In 1890, when the gold-production ratio was 99, prices were 98. In 1910, when the gold-production ratio was 105, prices were 106. On other dates the correspondence is much less than on the dates mentioned. However, Warren and Pearson made no claim for equality between the gold-production ratio and the price level for any particular year. Rather, they held that the relationship is merely between trends. The five-year averages show more correspondence than do the figures for individual years.

A comparison of the gold-production ratio with prices. Reference to Table 74 shows that the widest divergence of prices from the gold-production ratio for any five-year period occurred in 1865-1869, when it was 7.4 per cent. However, if one takes into account that during the next five-year period prices diverged, in the opposite direction, from the gold-production ratio by 5.6 per cent, it appears that, over the ten-year period 1865-1874, the total divergence of prices from the gold-production ratio was 13 per cent. Moreover, if one chooses a different series of five-year periods, the results are not the same. For example, a five-year average of the gold-production ratio and prices for 1892-1896 shows a deviation of prices from the gold-production ratio by 10.2 per cent. If this be compared with the deviation in the opposite direction of 5.1 per cent during the period 1910-1914, the total deviation of five-year averages between 1892 and 1914 amounts to 15 per cent. If the deviations of individual years are examined, one finds, for example, that in 1894, the price index was 16.5 per cent below the gold-production ratio, while 16 years later, in 1910, the price index was 16 per cent above the gold-production ratio.¹⁵ Because of cyclical variations, there occur wide deviations of prices away from the estimated normal based upon the gold-production ratio. For this reason, the ratio of gold stocks to world production provides an exceedingly doubtful basis for explaining cyclical price movements.

The calculation of Warren and Pearson is open to the same general criticism that applies to Cassel's and Kitchen's estimate of the "normal" gold supply. At best it shows that during a period when substantial reductions in the use of silver as money were occurring, and while profound modifications were taking place in the use of bank credit, a rough correspondence existed

¹⁵ *Ibid.*, pp. 78-79.

between the ratio of gold to physical production and the level of English wholesale prices.¹⁶

TABLE 74

COMPARISON OF ENGLISH WHOLESALE PRICES WITH THE RATIO OF WORLD
MONETARY GOLD STOCKS TO PHYSICAL PRODUCTION *

<i>Five-year Period</i>	<i>Gold Physical Production</i>	<i>English Wholesale Prices</i>	<i>Divergence of Prices from Gold- Production Ratio</i>
1850-1854	113	116	+2.6
1855-1859	136	134	-1.5
1860-1864	144	137	-4.8
1865-1869	147	136	-7.4
1870-1874	134	141	+5.2
1875-1879	121	124	+2.4
1880-1884	106	113	+6.6
1885-1889	99	96	-3.0
1890-1894	97	93	-4.1
1895-1899	94	87	-7.4
1900-1904	97	97	0.0
1905-1909	100	102	+2.0
1910-1914	106	113	+5.1

* Reprinted by permission from *Prices*, by Warren and Pearson, published by John Wiley & Sons, Inc.

The argument that there was an accumulated gold shortage in 1929. Warren and Pearson estimated the world supply of monetary gold in 1929 at 52 per cent above the prewar level and world physical production for that year at 40 per cent above the prewar level. There was sufficient gold in 1929, therefore, to support a price level 9 per cent above the prewar prices. But the actual price level of 1928-1929 was about 40 per cent above the prewar level and was abnormally high in view of the relative gold supply. Prices remained at this high level only because of the abnormally low monetary demand for gold during the years when the world was largely off the gold standard. The resumption of the gold standard was largely completed in 1928 and

¹⁶ Warren and Pearson make a similar comparison between the ratio of gold to physical production and prices in the United States. For 1880-1884, the index of prices was 116 and the gold-production ratio was 89. This was a divergence of 30.3 per cent. But by beginning with 1885 and carrying the comparisons down to 1914, they are able to say that the greatest deviation of prices from the gold-production ratio was 7 per cent, during 1900-1904. During no other five-year period was the deviation more than 4 per cent. *Ibid.*, pp. 84-86. They dismissed

the criticism that $\frac{\text{Gold}}{\text{Production}} = \text{Prices}$ applied only during a period when silver was being replaced by gold, by asserting that the process of such substitution still continues. (P. 109.)

brought with it a return of the old normal demand for gold. The "vigorous bidding" for gold, which enhanced the value, grew worse until a world-wide panic developed. It is in this manner that Warren and Pearson have explained the rapid decline in prices that began in 1929.¹⁷ It was merely a postponed and violent readjustment to the natural price level dictated by the gold-production ratio.

Economies in the use of gold. In contrast to the contention of Warren and Pearson that the postwar price level was too high to be maintained by the gold supply, there was a common belief that the gold supply of 1923-1928 was adequate to support the existing price level. No doubt the relatively stable world prices in terms of gold during this period lent color to this belief. The basis for the expectation that the 1928 price level could be maintained with existing gold supplies was the marked increase in the efficiency in the use of gold that appeared between 1914 and 1928.

The new economies in the use of gold introduced after 1914 were (1) the substitution of bank notes for gold and gold certificates in circulation, (2) a reduction in the reserve ratios of the banking system, and (3) the introduction of the gold exchange standard.¹⁸ One cannot be altogether certain of the actual realized economies in the use of gold in 1928 arising from the withdrawal of gold from circulation during the war. Edie estimated that gold taken out of circulation and placed in central bank reserves was sufficient to support a credit and price structure about 35 per cent above that ruling in 1913. This view assumed that the gold output during the war and postwar years was sufficient to care for the needs growing out of the secular increase in production.¹⁹ Edie's calculations seem overgenerous in counting all the gold in prewar circulation as being transferred into central bank reserves by 1928. Although this took place during the war itself, during the postwar period as much gold returned to circulation in the United States as was in circulation before the war. This is not to say that substantial economies were not realized during the period discussed. Nevertheless, it is probable that the economies realized from removing gold from circulation have been overestimated and that the world was operating upon somewhat smaller gold reserve ratios than before the war. However,

¹⁷ *Ibid.*, pp. 115-116.

¹⁸ For a good exposition of this position, see Edie, *Money, Credit, and Prices*, pp. 260-266.

¹⁹ *Ibid.*

the Netherlands; Japan, Spain, the United Kingdom, Denmark, Norway, and Sweden all had larger central bank gold reserves in proportion to their earning assets in 1925 than in 1913. Germany's gold reserve ratio was, however, slightly less in 1925 than in 1913, while the gold reserve ratio of France was less than one-half and that of Italy only one-third as large as in 1913.²⁰

The weakness in Warren and Pearson's attempts to show that the price decline after 1929 was secular in nature and due to accumulated gold shortages lies primarily in their assumption that no substantial economies of a permanent nature were realized after the war. They refuse to recognize the accomplished facts of (1) a withdrawal from circulation of very considerable sums of gold, (2) the use of the gold exchange standard, (3) the decline in required gold reserves by the introduction of the Federal Reserve System, and (4) the practice of central banks of operating on somewhat smaller gold reserves after the war. Their argument that a gold shortage was caused by the preparation of paper standard countries to return to gold is unconvincing. The notion that in some way countries bid for gold and thus enhance its value is of little value without a clear understanding of how such a demand is expressed. Unless they have lost faith in their banking system, private citizens do not hoard gold, yet hoarding is the only manner in which they can express a demand for it. Likewise, commercial banks, interested primarily in the maintenance of adequate cash reserves in the form of central bank notes and deposits, will hardly engage in a "scramble for gold." True, they may under certain circumstances endeavor to improve their liquidity by reducing loans and investment, but this is in no way related to a desire to obtain gold in order to protect the gold standard. There remains, therefore, only central banks and governments to bid for gold. This they undoubtedly will do if they fear that their reserves may be lost to some other country.

The re-establishment of the gold standard during the 1920's did cause some countries to build up their gold reserves that had become depleted during previous periods of currency inflation. Between December 31, 1924, and December 31, 1928, Germany increased its gold holdings \$469,000,000; France increased its gold supply \$544,000,000; while Austria, Belgium, Czechoslovakia, Hungary, Italy, Poland, and Switzerland together acquired \$233,000,000 and Argentina, Brazil, and India gained \$273,000,000.

²⁰ League of Nations, *Memorandum on Currency and Central Banks, 1913-1925*, Vol. VI, 1926, pp. 84-85.

Altogether, these countries acquired about \$1,500,000,000 in gold, the bulk of which came from the United States and from new production.²¹ During this period, the United States willingly and freely parted with gold moving to the new gold standard countries. It maintained low money rates throughout the period with the purpose of encouraging just such an outflow. Other countries not acquiring newly mined gold showed no signs of contracting their credit structure for the purpose of attracting gold. It was not until the stock market boom of 1928 and 1929 that tight money rates began to appear, first in the United States, as the Federal Reserve System tried vainly to check the boom, and later in other countries that were trying to protect their gold reserves from the attraction of the American money market. During 1929 France converted its holdings of foreign exchange into gold and imported the gold to the amount of \$379,000,000, but this was not the result of the resumption of gold at that time. The franc was stabilized in 1926 and legally restored to gold in 1928.

It is desirable to study Professor Warren and Professor Pearson's position in respect to the adequacy of the gold supply because of the important influence which their views have had upon the gold and monetary policies of the United States since 1933. Their studies led them to take a position closely analogous to that of the "bullionists," who hold that the value of the monetary unit is derived from and dependent upon the bullion value embodied in it. They argued (1) that the drop in prices after 1929 was due to the rise in the value of gold due to accumulated shortages and (2) that it was therefore possible to restore prices to any desired level simply by reducing the gold content (and hence the value) of the monetary unit. So persuasively did Professor Warren press this view, that in large measure he may be credited with the Administration's gold purchase policy of late 1933 and the devaluation of the dollar in 1934.

*The Maldistribution of Gold as a Cause of the Decline in
Prices After 1929*

In its final Report, the Gold Delegation of the Financial Committee summed up its position in regard to the causes of the breakdown of the gold standard. Referring to a series of events and situations that it believed to be the primary sources of trouble, it remarked, "The recital of these events by which the

²¹ Cf. Hardy, *Is There Enough Gold*, pp. 153-164.

gold standard has been unable to function is sufficient in itself to indicate that the causes which provoked them lie deep in the economic, financial, and monetary instability of the postwar period." In another connection, it said, "We wish at this point to record our opinion that the world's total stock of monetary gold, apart from any considerations as to its distribution among different countries, has at all times in recent years been adequate to support the credit structure legitimately required by world trade and that the rapid decline in prices, which began in 1929, cannot be attributed to any deficiency in the gold supply considered in this sense."²² Although the Report recognized the need for a correction of excessive inequality in the distribution of gold before any attempt should be undertaken to restore the gold standard, it did not consider the maldistribution of gold as the important reason initiating the decline in prices after 1929.

Three members of the Gold Delegation, however, filed a note of dissent to the Report in which they strongly urged that the maladjustment in the gold supply, brought on by the stoppage of United States foreign lending, by war debt payments, and by high tariffs, was to blame for the fall in prices after 1929. These dissenters were not the only supporters of the theory that the maldistribution of gold was responsible for the price decline. A British Royal Commission remarked in its report, "The present distribution of gold is very generally held to be unsatisfactory: a maldistribution to which is to be attributed a large measure of responsibility for the heavy fall in prices in recent years."²³

The changes in the distribution of gold after 1926 are shown in Table 75. According to the adherents of the theory that the drop in prices that began in 1929 was caused by a maldistribution of gold, the primary offenders were France and the United States. Yet the combined gold holdings of these countries at the end of 1929 were only \$650,000,000 larger than in December, 1926. This was a net gain of 12.4 per cent during the three-year period and does not appear excessive in the light of a gain in gold holdings by the other countries of 5 per cent, or \$241,000,000. It does not seem probable that this shift in gold was sufficiently

²² League of Nations, *Report of the Gold Delegation of the Financial Committee*, 1932, pp. 23 and 32.

²³ *Report of the Committee on Finance and Industry*, 1931 (The Macmillan Report), p. 67. It is interesting to note that an earlier Royal Commission found occasion to complain that a maldistribution of gold, due in part to hoarding of gold by the United States, was responsible for declining prices after 1873. See *The Monetary Problem, Gold and Silver*, Royal Commission on Gold and Silver, Final Report, 1888, edited in 1936 by Ralph Robey, pp. 34-36 and 46.

TABLE 75

DISTRIBUTION OF MONETARY GOLD STOCKS OF IMPORTANT COUNTRIES AND AREAS^{*}
(In millions of dollars)

	December 1926	December 1927	December 1928	December 1929	December 1930	December 1931
<i>Countries showing a net gain of gold, 1926-1929:</i>						
South America		796				
Mexico and Caribbean	660		927	744	558	473
Germany	154	171	180	179	166	160
Spain	464	471	676	569	552	359
France	493	502	494	495	471	468
Other European	978	977	1,271	1,641	2,099	2,211
	995	1,060	1,148	1,226	1,278	1,344
Total gold stocks for the group	3,744	3,977	4,696	4,854	5,124	5,015
Total net gain for year		233	719	158	270	(loss) 9
<i>Countries showing a net loss of gold, 1926-1929:</i>						
United States		4,379	4,141	4,284	4,593	4,956
Canada	4,492	229	191	151	194	157
Asia	230	738	738	731	601	626
United Kingdom	751	842	836	791	792	865
Oceania	845	254	255	213	105	103
	266					
Total gold stocks for the group	6,584	6,442	6,161	6,170	6,285	6,707
Total net loss for year		142	281	(gain) 9	(gain) 115	(gain) 422

^{*} League of Nations, *Report of the Gold Delegation of the Financial Committee*, 1932, pp. 78-81.

violent to precipitate a world-wide fall in prices of the magnitude of that beginning in 1929. In support of their view, the proponents of the maldistribution theory cite the changes in distribution of gold between December, 1928 and December, 1931. During this period, France and the United States gained together \$1,755,000,000 by absorbing the bulk of the newly mined gold and by taking \$900,000,000 from the rest of the world. Undoubtedly this heavy movement of gold seriously added to the liquidation of credit and the decline in prices during 1931-1932. But the price level began its downward trend in 1929 before gold movements of any magnitude had occurred. Once under way, the fall in prices and depression in business put heavy pressure upon the gold supply of countries exporting raw materials. The deflationary pressure resulting within such countries undoubtedly aggravated the downward movement of world prices. However, there is little support for the view that France and the United States were responsible for initiating the price decline by following a policy of tight money and low prices and attracting gold away from less fortunate countries.²⁴ On the contrary, any responsibility that might be laid at the door of the United States arose from its attempt, in 1924 and 1927, to repel gold by adopting an easy money policy. This attempt miscarried when the low money rates stimulated the great speculative boom in securities that culminated in the crash of 1929. This crash, with its disastrous effect upon business confidence and profits, precipitated a collapse of a world price structure that was already weakening.

There is little evidence that the movement of gold to France and the United States caused any undue pressure upon the monetary systems of the rest of the world in 1929. At best the credit structure and price level of any country are but loosely tied to its gold supply. Because of the offsetting practices of central banks, small gold losses need not necessarily impose any appreciable credit restriction. If deflationary pressure arises from gold shortages, such pressure should be evident in the behavior of bank deposits and money in circulation. The evidence presented in Table 76 indicates that, up to the end of 1930, little if any deflationary pressure was being felt because of a shortage of gold. At the end of 1930, the volume of demand deposits in each of the five countries save the United States was greater than at the end of 1929. Only the United States, with its bounti-

²⁴ Cf. Hardy, *Is There Enough Gold*, pp. 95-102.

TABLE 76

PERCENTAGE CHANGE IN SIGHT DEPOSITS OF COMMERCIAL BANKS AND IN THE COMBINED VOLUME OF SIGHT DEPOSITS AND CURRENCY IN CIRCULATION *

End of	UNITED STATES			FRANCE			GERMANY			UNITED KINGDOM			ARGENTINA		
	Sight Deposits	Deposits Plus Currency	Deposits Plus Currency	Sight Deposits	Deposits Plus Currency	Deposits Plus Currency	Sight Deposits	Deposits Plus Currency	Deposits Plus Currency	Sight Deposits	Deposits Plus Currency	Deposits Plus Currency	Sight Deposits	Deposits Plus Currency	Deposits Plus Currency
1929.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1930.....	99.3	97.6	104.8	104.8	110.8	101.6	97.4	97.4	103.0	103.4	100.9	98.7	100.9	98.7	98.7
1931.....	87.9	88.8	104.0	104.0	114.1	86.1	94.4	94.4	89.4	89.4	82.5	83.6	82.5	83.6	83.6
1932.....	67.6	75.2	102.3	102.3	110.7	77.7	83.4	83.4	101.6	101.3	91.9	87.2	91.9	87.2	87.2

* Original data taken from "Monetary Review," *Money and Banking, 1936-37*, Vol. I, League of Nations, pp. 112-125.

ful supply of gold, showed a decline in demand deposits, and that decline was extremely small. But during the same year, the decline in wholesale prices was well under way with the United States index declining from 96 to 82. In view of the fact that the decline in prices and the business depression had definitely begun before any reduction had appeared in the volume of demand deposits, it is difficult to see how the maldistribution of gold can properly be blamed for starting the world depression.

Although the evidence hardly demonstrates that a maldistribution of gold was responsible for the downward turn in world prices that began in 1929, one cannot deny that the basic situation in the world's monetary systems was made more precarious because of the relatively small gold reserves available to some of the central banks. Nor should one neglect the actions of the United States and France that made the maintenance of the gold standard a somewhat delicate matter. Both countries were in a strong creditor position in respect to their balance of trade and avoided attracting gold only by making substantial loans abroad. Before the depression, both were lending extensively at short term rather than at long term, a fact which exposed the debtor countries to potential drains of gold whenever their solvency became questionable. Once the fall in prices actually developed, the maldistribution of gold was accentuated by the withdrawal of short-term credits and the depressing and disturbing effects of this maldistribution became a reality.

CHAPTER XLV

THE BREAKDOWN OF THE GOLD STANDARD AFTER 1929

THE painstaking effort to restore the international gold standard had hardly been concluded when a turn of economic events took place that swiftly led to its collapse and failure. In the summer of 1929, some recession in business appeared to cloud the horizon of American prosperity. It was the spectacular collapse of the stock market in October, however, that decisively marked the onslaught of a depression of overwhelming and world-wide proportions. To examine in detail the causes of this depression is beyond the scope of our study of money here. We have already examined the claims of some writers that either a shortage or a maldistribution of gold forced down the world price level and thus started a deflationary movement responsible for the depression. These claims, as we have seen, rest upon doubtful grounds, and neither a shortage nor a maldistribution of gold may properly be considered the genuine and fundamental cause of the depression. Rather, it appears to have been a cyclical reaction from the world-wide expansion of the 1920's accentuated by the maladjustments that remained from the First World War.

Although rejecting the theory that the causes of the collapse of prosperity in 1929 lay directly in gold, one cannot properly deny that the attempts to maintain the gold standard during the early years of the depression contributed to and made more pronounced the violence of the credit liquidation which occurred. The last statement can best be understood by examining the nature of and the environment surrounding the gold standard in the late 1920's.

The Gold Standard During the 1920's

The nature of the postwar gold standard of the 1920's. The gold standard of the 1920's differed from that before 1914 in several important respects. Briefly stated, these differences were:

1. The widespread use of the gold exchange standard.
2. The increased practice by central banks of offsetting the effects of gold movements in the interest of domestic stability.
3. The withdrawal of gold from circulation and the substitution of central bank notes in its place.
4. The redemption of paper currency in bullion instead of coins in many important gold standard countries.

Both the increased use of the gold exchange standard and the growing tendency of central banks to offset gold movements created difficulties in the way of a proper operation of the gold standard. Though by no means the exclusive cause, the gold exchange standard stimulated the appearance of foreign-owned short-term balances deposited or invested in the central money markets of important gold standard countries. Further, its use reduced somewhat the corrective action of gold movements, because corrective effects were largely confined to the price and credit structure of the gold exchange standard countries.

Still more disturbing to the operation of the gold standard was the refusal of central banks to adapt their credit policy to gold movements and their pursuance of a policy of domestic stabilization. Before the general restoration of gold in the 1920-1925 period, little objection could be raised to such a policy when used by the Federal Reserve System. Later, the Bank of England and the Bank of France also attempted to manage the currencies of their respective countries in the interests of internal stability. Under these circumstances, the corrective effects of gold movements upon international price levels were largely lost.¹

The environment of the postwar gold standard. Not only were there important differences between the postwar and prewar gold standard, but there were also important changes in environmental conditions. These changes, which tended to increase rather than lessen the difficulties of maintaining an international gold standard, included:

1. A more troublesome international debt structure.
2. The great increase in foreign-owned short-term balances held in important money centers.
3. The irregular nature of international lending.
4. The growth of rigidities in the internal price and cost structures.

¹ For a detailed discussion of this point, see Gayer, Arthur D., *Monetary Policy and Economic Stabilization*, 1935, pp. 18-22 and 29-32.

Postwar international debts. The international debt structure of the 1920's was heavily loaded with loans and obligations not originating in any expansion in the productive facilities of the debtor. This was true of the intergovernmental war debts and reparations, and of many of the debts created after the war, when governments both of central Europe and of South America were borrowing for internal improvements of various kinds. These obligations constituted a constant threat to the balance of payments of the debtors. In contrast to what might be called "international consumption loans," loans made for productive capital purposes furnish the debtor with a basic means for debt service.

The prevalence of short-term balances. The use of the gold exchange standard encouraged central banks to carry reserve funds as deposits in foreign banks and as investments in foreign bills and acceptances. At the same time, other powerful forces were operating to encourage similar action by other banks and private investors. Immense losses on long-term foreign investments resulted from the war and from the postwar inflation period. France lost heavily owing to the repudiation of Russian debts after the Russian revolution; and, to avoid such losses in the future, French postwar lending was largely in short-term form. The total short-term international indebtedness was reported as being over 9½ billions of dollars at the beginning of 1931. Whenever there arose any loss of confidence in currency stability, these short-term balances, readily shiftable at the will of the owners, were a constant menace to the debtor countries. To the extent that a country with a favorable balance of trade extended to buyers short-term instead of long-term credits, a loss of confidence in the credit position of the buying country not only shut off the possibility of additional loans but also acted to make due and payable the whole mass of past credits. The existence of such a large volume of short-term international debts left the balance of payments of the debtor countries so exposed that without large excess gold reserves, they could not hope to maintain gold payments in the face of any serious threat to their currencies.

The irregular nature of foreign lending. The irregular nature of American and French foreign lending contributed something to the difficulties that beset the gold standard of the 1920's. The record of American lending appears in Table 77. When borrowing countries have adjusted their economies to a substantial inflow of capital from abroad, they are likely to experi-

TABLE 77

NET EXPORTS OF AMERICAN CAPITAL

(In millions of dollars)

	1923	1924	1925	1926	1927	1928	1929	1930
Net exports of long-term capital	-30	733	560	540	695	718	319	290
Net export of short-term capital	- 3	-216	61	-359	...	226	-13	449
Net private capital exports, long- and short-term	-33	517	621	181	695	944	306	739

ence some embarrassment when that flow is abruptly shut off. The immediate result of the stoppage of foreign capital imports is an adverse balance of payments that requires a considerable length of time, and possibly a substantial loss of gold, for re-establishment of equilibrium. Furthermore, when long-term lending was diminishing, short-term loans tended to increase. Although short-term loans temporarily relieved the pressure upon the borrowing countries, in all probability they were worse than nothing because of the pressure for their collection that arose with the onset of the depression.

Rigidity of cost and price structures. The gold standard requires enough price flexibility within the several countries to permit an adjustment of prices on a scale sufficient to maintain substantial equilibrium in the balance of payments. This is necessary if corrections of adverse trade balances are to take place soon enough to avoid excessive gold losses. In addition, not only prices of goods that move in international trade, but also their costs of production, must be flexible. This is especially necessary when an adverse balance of payments requires a reduction in prices. The extent to which costs of production decline readily determines the degree of business depression and stagnation that will be required. The greater the inflexibility of costs, the greater must be the business depression required to bring costs down into line with the selling prices necessary for a restoration and maintenance of equilibrium in the balance of payments. It follows that the greater the rigidity of costs, the more likely will governments be tempted to escape the troubles of deflation by abandoning gold payments. In fact, the political pressure for such action may at times be irresistible.

During the 1920's, there was evidence that the rigidities of

costs and prices were becoming somewhat greater than before. In England, for example, wage rates were difficult to reduce because of the combined effect of more powerful trade unions and the dole. In various parts of the world, price stabilization was undertaken in the interests of raw material producers. An example of this can be found in the Farm Board's activities in the United States, designed to maintain agricultural prices. Monopoly and near-monopoly conditions have increased with the continued growth of large-scale enterprise. The extension of the sphere of governmental activities, and with it the increase of government debt burden, tend to expand the inflexible tax burden of business.² Any expansion of the field of regulation of prices and rates by government boards, such as occurs in the public utility field, adds to the list of prices that are inflexible in nature.

Summary. We have seen that conditions which confronted the gold standard during the 1920-1930 period were less favorable to its successful functioning than those before 1914. For many countries there were more than the ordinary sources of danger to the balance of payments. Short-term debts between nations abounded. Uneconomic war debt payments had constantly to be met. Long-term foreign lending was on a large but highly variable scale. The growth of governmental participation and interference in business, the rise in power of trade unions, and the decline in competition appear to have reduced the ability of the price systems of individual countries to make the adjustments necessary to the maintenance of the gold standard. The attempts of the central banks of England, the United States, and France to achieve internal stability by offsetting gold movements prevented the prompt price adjustments needed to maintain equilibrium in the balance of payments. Especially were the Bank of France and the Federal Reserve System open to criticism from some quarters on the ground that they failed to follow the "rules of the game" of the gold standard by their failure to repel gold through adequate credit expansion.³ The United States emerged from the First World War as the greatest creditor nation in the world. As such it failed to live up to its responsibilities (a) by failing to establish a stable policy of mak-

² Cf. Gayer, *op. cit.*, Chapter III. Also Gregory, T. E., *The Gold Standard and Its Future*, 1932, pp. 32-34.

For a summary of forces making for price rigidities, see Backman, Jules, "The Causes of Price Inflexibility," *Quarterly Journal of Economics*, May, 1940.

³ For an examination of the pros and cons of this question, see Gayer, *op. cit.*, pp. 98-113.

ing long-term foreign loans and (b) by increasing instead of lowering its tariffs on imports to facilitate repayment of old debts.

Finally, a depression of world-wide proportions released and aggravated serious threats to exchange stability, which previously had been held in check by only a precarious margin.

The Abandonment of the Gold Standard by Raw-Material Countries

The operation of the forces that contributed to the breakdown of the gold standard may best be seen in the experience of particular countries. The first countries to suffer from the depression were those engaged primarily in production and export of raw materials.

The Australian experience. Australia depends heavily upon its foreign trade. Before the depression, the value of its merchandise exports was £140,000,000, compared to a total production valued at £448,000,000. The fall in raw material prices beginning in 1928 caused a serious decline in the value of Australian merchandise exports. From a value of £139,979,000 in the year 1928-1929, they fell to £98,098,000 in 1929-1930 and to £79,855,000 in 1930-1931. Thus, in one year exporters' incomes declined about £40,000,000. But the shrinkage in exporters' incomes did not cause a corresponding drop in imports. Between the years 1928-1929 and 1929-1930, Australian imports declined about £10,000,000 while exports fell by £40,000,000. The Australian balance of payments was further affected by the abrupt cessation of the inflow of foreign capital, which had amounted to about £30,000,000 annually. This borrowing abroad had been for the purpose of financing public improvements rather than for the direct importation of foreign goods, a fact that created still further difficulties in the balance of payments. The combined effect of the drop in exports and the cessation of borrowing abroad was a sharp impairment of the reserves of the Australian banking system. The loss in London balances and reserves amounted to £13,565,000 during the year ending June 30, 1929, and £56,297,000 during the year ending June 30, 1930.⁴ The annual interest charges on the old foreign debts amounted to approximately £30,000,000, so that the borrowings abroad had been sufficient to cover the service on the foreign debt.

To meet the situation, additional import duties were imposed early in 1930 and some imports were entirely prohibited. It

⁴ Gilbert, *Currency Depreciation*, pp. 6-14.

was not until the imposition of these new duties in 1930 that a substantial decline in imports was achieved. The free export of gold was terminated in January, 1930. In order that foreign exchange might be available to meet interest payments on the public foreign debt, exchange control measures were applied to check unnecessary imports and travel abroad. This move was prompted by a desire to avoid the heavy tax increase that would have been required to pay interest abroad had the exchange rate been allowed to depreciate. Gold reserves were mobilized and used freely to support the exchange value of the Australian currency in terms of the British pound. During 1930, Australian currency averaged 94.3 per cent of parity. In support of this policy, Australia exported £26,865,000 in gold during the year of July, 1929–July, 1930. This so exhausted the gold reserves that further attempts to peg the exchange value of the domestic currency failed, and in January, 1931, it fell to 30 per cent of parity in terms of sterling.⁵

The abandonment of gold by Brazil and the Argentine. The abandonment of the gold standard by the Argentine in December, 1929, and by Brazil in October, 1930, arose from essentially the same causes as those which operated in Australia. Each country suffered from a decline in the value of agricultural exports, a drop in the import of foreign capital, and a failure of the value of merchandise imports to decline rapidly enough to restore the balance of payments to equilibrium. A strong contributing factor in all three cases was the fact that exports of raw materials tended to have both highly unstable prices and an inelastic demand, while imports were mainly manufactured goods whose prices declined much more slowly than did prices of exports. Under the circumstances of acute, world-wide deflation and depression, countries in this position could hardly expect to succeed in restoring equilibrium in their balance of payments by internal deflation, for the goal was a moving and unattainable one. It is little wonder, therefore, that they sought escape in currency depreciation.

The Breakdown of the Gold Standard in England, 1931

Peculiar significance is attached to the abandonment of gold by England on September 21, 1931. Although a number of the

⁵ Smith, Lawrence, "Suspension of the Gold Standard in Raw Material Exporting Countries," *American Economic Review*, September, 1934, pp. 446–447. This article contains a good analysis of the situation in Brazil and in the Argentine as well as in Australia.

smaller countries exporting raw materials had previously taken the step, the movement did not reach formidable proportions until England abandoned gold. Her action was the signal for a wholesale abandonment not only by the other parts of the Empire but also by a number of other important trading countries having close economic ties with England.

The British balance of payments. There has been a widespread opinion that England's return to the gold standard in 1925 resulted in the overvaluation of the pound, a situation aggravated by the undervaluation of the franc after 1926. The correctness of this opinion cannot be verified by resort to a direct calculation of purchasing power parity, for such calculations are not accurate enough to determine whether or not a currency is mildly overvalued. Evidence of overvaluation, however, may be found in the development of an adverse balance of payments, a loss of gold, and a consequent depression within the country. If one defines an equilibrium rate of exchange as one under which there is an equilibrium in the balance of payments, including all items except gold movements and short-term capital movements, one must conclude that whenever short-term capital imports or gold exports are required to make settlements, the currency is overvalued. In the case of England, however, which habitually lends at long term abroad, this means little more than that, with the given propensity of Englishmen to indulge in foreign lending, the current rate of exchange does not provide adequate stimulus to exports to provide the full amount of foreign exchange required.

The behavior of the English balance of payments gives some reason for believing that in the sense used above, sterling was overvalued between 1925 and 1931. Regardless of the cause, the facts were that after 1926 the Bank of England's gold supply tended to decrease slightly, and the Bank was under the necessity of maintaining its discount rate at a level somewhat above money rates in Paris and New York in order to attract and hold short-term capital. The weakness of the British position in 1931 arose from the fact that a correction in the fundamental balance of payments was not enforced by a sufficiently sharp increase in the discount rate to bring about a decline in prices. The stickiness of wages and other prices in Britain made internal deflation difficult without producing severe unemployment. The situation was aggravated by the failure of British manufacturing technique to maintain pace with improvements in other countries. This explains the reluctance to raise discount rates suffi-

ciently to bring about a fundamental adjustment in the balance of payments. Furthermore, low money rates had the advantage of being of some assistance to the export trade by encouraging foreign lending. It is easy, therefore, to understand the indulgence in temporizing practices designed to attract short-term capital to London. That the situation was becoming somewhat better rather than worse in 1931 is indicated by a gradual decline in London's net short-term liabilities between 1928 and March, 1931.⁶

The crisis of September, 1931. England was compelled to abandon the gold standard in September, 1931. The immediate cause was the international banking panic, sometimes called the liquidity crisis, which began with the troubles of the Austrian *Creditanstalt* and the German *Nationalbank* during the May-July period of that year. Only strong measures, amounting to government guarantees, enabled these banks to survive. The banking panic in Austria and Germany was a prelude to the suspension of payments on Germany's short-term indebtedness (the Standstill Agreements). The immobilization of these short-term credits, a substantial part of which had been extended by London, created some distrust of the London money market.⁷ Early in 1931, the weakness of the British budget position had been exposed, and further signs of difficulty became evident with the rumors of discontent within the navy.

In the face of these uncertainties, foreign bankers attempted to protect their reserves by withdrawing their London balances in gold. Normally the Bank of England was able to control and check the outflow of gold by raising the discount rate. But the Bank Rate is effective in controlling the movement of short-term capital only when it functions in an environment of unlimited confidence. When suspicion as to the solvency of the banking system exists, interest rates become subordinated to security. During July, 1931, the United Kingdom exported nearly £27,000,000 in gold. During August, credits amounting to £130,000,000 were established with the Bank of France and the Federal Reserve Bank of New York. However, the pressure on the available gold and foreign exchange reserves of the Bank of England was too great to be successfully withstood, and it ceased paying out gold on September 21, 1931.

⁶ *The Report of the Committee on Finance and Industry* (The Macmillan Report), 1931, p. 112.

⁷ London's share was about \$255,000,000. Cf. Gregory, *The Gold Standard and Its Future*, 1935, pp. 56-59.

The abandonment of gold by other countries. England's abandonment of gold was followed almost immediately by similar action on the part of other countries. The intimate trade relation between Sweden and Great Britain made the depreciation of sterling of vital importance to the export trade of the former country. Cheapening of sterling in terms of the Swedish krona was bound to have an adverse result on Swedish exports, of which 25 per cent went to Great Britain. During the first week following the suspension of gold by England, it was commonly believed that Sweden would have to follow suit, and there resulted, therefore, a flight from the krona, costing Sweden 100,000,000 kronor in gold and foreign exchange. On September 27, therefore, Sweden abandoned gold, and was quickly followed by Norway and Denmark. Finland left the gold standard on October 12, while Japan succumbed to heavy gold losses and suspended gold payments on December 13.⁸

The abandonment of gold by the United States. Despite substantial drains upon the gold reserves of the Federal Reserve System, arising from some flight from the dollar and from some internal gold and currency hoarding, the United States was amply able to maintain gold payments for the first fifteen months following the abandonment of gold by England and the Sterling Bloc in September, 1931. In February, 1933, however, the domestic banking system took an acute turn for the worse. Bank failures mounted at a rapid rate, culminating in the general banking holiday of March 6, 1933. As a part of the anti-hoarding regulations put into force during the holiday, control over foreign exchange transactions and gold exports was placed in the hands of the Secretary of the Treasury. The banking holiday constituted, for the time being, an abandonment of the gold standard. At first this action was expected to be temporary and to be followed ultimately by a restoration of a free movement of gold whenever the condition of the domestic banking system warranted it. The Secretary of the Treasury did not entirely ban the export of gold but granted export licenses for settlement

⁸ By April, 1932, the gold standard had been suspended in Argentina, Australia, Bolivia, Brazil, Chile, Denmark, Ecuador, Egypt, Finland, Greece, India, Iraq, the Irish Free State, Japan, New Zealand, Norway, Paraguay, Portugal, Rhodesia, Salvador, Spain, Sweden, the United Kingdom, and Uruguay. Furthermore, while not officially suspended, the gold standard was not in effective operation in Austria, Bulgaria, Canada, Columbia, Costa Rica, Czechoslovakia, Estonia, Germany, Honduras, Hungary, Jugoslavia, Latvia, Newfoundland, Nicaragua, Turkey, USSR, and Venezuela. Hodson. H. V. *Slump and Recovery, 1929-1937*, 1938, p. 92.

of foreign obligations not arising from the flight of capital and speculative dealings. Under these circumstances, the dollar did not suffer any noticeable depreciation in terms of gold currencies. On the contrary, confidence in the future value of the American dollar was high.

The Administration reached the conclusion that its program of domestic recovery required that the domestic price system be freed from the deflationary influence of world gold prices. It therefore served notice upon the world that any immediate return to gold was not to be expected, by the issuance of an Executive Order, on April 20, 1933, which prohibited the export of gold save by the express authorization of the Secretary of the Treasury and for transactions necessary to "promote the public interest" as approved by the President. In effect this order marked the end of the adherence to the gold standard by the United States. Unlike England, which was forced off the gold standard by the exhaustion of its gold reserves, the United States abandoned gold deliberately and as a part of its domestic recovery policy. We shall postpone a more detailed account of American experiences during this period until the next chapter.

The abandonment of gold by the European Gold Bloc.⁹ Led by France, which violently opposed currency devaluation, six European gold standard countries joined in an agreement of solidarity to preserve the maintenance of the gold standard at the existing parities. This action was taken in July, 1933, after the abandonment of gold by the United States. In this group of countries were France, Belgium, Italy, the Netherlands, Luxembourg, and Switzerland. The maintenance of the gold standard with the old parities in the face of a depreciation of about 40 per cent in the pound and the dollar meant certainly an overvaluation of the Gold Bloc currencies in the foreign exchange markets. The result was a continuation of falling prices and credit deflation. During 1934, French wholesale prices fell 15 per cent.

The weakest of the Gold Bloc countries was Belgium, whose currency was exposed to intermittent rumors of impending devaluation that resulted in speculative pressure on the exchange value of the belga. Despite assistance in the form of foreign loans, the Belgian Government was unable to resist the pressure for devaluation. Internal deflation could not be carried through

⁹ For a thorough discussion of the breakdown of the Gold Bloc, see Hodson, *Slump and Recovery, 1929-1937*, Chapters X and XI.

sufficiently to maintain the old gold parity, and the belga was devalued to 72 per cent of its old gold value at the end of March, 1935. Devaluation of the belga was successful in relieving, for the time being, the deflationary pressure within Belgium. It increased the difficulties of the remaining members of the Gold Bloc, however, and led to the flight of capital from those countries. Political changes in France required that attempts be made to reverse the deflationary trend. The Popular Front government embarked upon reforms that inevitably tended to increase costs of production, but for a time resisted as inflationary any moves in the direction of devaluation. On September 25, 1936, the French, British, and the United States Governments issued statements announcing the intention of the French Government to devalue its currency and pledging themselves to use appropriate means to avoid unnecessary disturbances and competitive exchange depreciation. The same day, it was announced that the franc was to be reduced in gold value by from 25.2 to 34.4 per cent. Switzerland and the Netherlands devalued their currencies by a like amount on the following day. Italy had already abandoned gold for exchange control, so that, from this time on, the Gold Bloc was definitely at an end.

CHAPTER XLVI

RECENT MONETARY EXPERIENCES IN THE UNITED STATES

DURING the bitter days of bank and business failure, price deflation, and economic stagnation preceding the bank holiday of March 6, 1933, the United States clung steadfastly to the gold standard. The lukewarm recovery efforts of the Hoover administration, such as open-market security purchases and rediscount rate reductions by the Federal Reserve banks and some assistance to embarrassed financial institutions, had failed dismally in the face of continued bank runs and failures. The New Deal Administration assumed office March 4, pledged to take effective measures to relieve the depression and restore prosperity. Impressed by the success of British monetary policy and by the theory advanced by Professor Warren, that the price decline was caused by a world gold shortage, the Administration embarked upon a policy of exchange depreciation as an instrument of recovery. The bank holiday facilitated the adoption of such a policy, since the emergency measures designed to ease the pressure on the banking system included a general ban upon gold hoarding and gold exports.

New Deal Emergency Measures

The anti-hoarding regulations of March 6, 1933. As a part of the proclamation relative to the bank holiday, banks were prohibited to pay out, export, earmark, or permit the withdrawal or transfer in any manner or by any device whatsoever of gold or silver coin, bullion, or currency, or take any other action that might facilitate hoarding. In addition, banks were not permitted to carry on any foreign exchange transactions.¹ On

¹ This proclamation was made under the authority of a wartime act of October 6, 1917. The Emergency Banking Act of March 9, 1933, confirmed and extended the President's authority during the emergency.

March 10, when the Secretary of the Treasury was authorized to permit the reopening of banks, banks were not allowed to pay out gold or gold certificates except under authorization of the Secretary of the Treasury, nor were they allowed to pay out any currency for hoarding. The export of gold was permitted only under license issued by the Secretary of the Treasury, and foreign exchange transactions were limited to normal non-speculative purposes.

Although these regulations prohibited banks from paying out money for hoarding purposes, it was not until April 5 that hoarding of gold and gold and silver certificates was directly placed under a ban. The Executive Order of that date required that all gold coin, gold bullion, and gold certificates be delivered to the Federal reserve banks, either directly or through member banks. The only exceptions to this order were (1) gold required for "legitimate and customary use in industry, profession or art within a reasonable time"; (2) gold coin and gold certificates in amounts of not over \$100 belonging to any one person,² and gold coins having a recognized special value to collectors of rare and unusual coins; (3) gold coins and bullion earmarked or held in trust for a foreign government, foreign central bank, or the Bank of International Settlements; (4) gold coin and bullion licensed for other proper transactions, including gold coin and bullion imported for re-export or held pending action on applications for export licenses. Under the same Executive Order, any person becoming the owner of any gold coin, gold bullion, or gold certificates after April 28, 1933, was required within three days to deliver such to the Federal reserve banks or to member banks, which in turn were required to deliver them to the Federal reserve banks.

Regulations on foreign exchange and gold exports. Foreign exchange dealings were temporarily ended by the bank holiday proclamation. The Executive Order of March 10 authorizing the Secretary of the Treasury to license the reopening of the banks permitted the resumption of normal non-speculative foreign exchange transactions, but allowed gold exports only "in accordance with regulations prescribed by or under license issued by the Secretary of the Treasurer." Following the reopening of the banks, permission to export gold for legitimate purposes appears to have been freely granted until April 18. After that date,

² This privilege was revoked by order of the Secretary of the Treasury, December 28, 1933.

export licenses were refused, in keeping with the newly developed policy of cutting loose the value of the dollar from that of gold.

The Thomas Amendment to the AAA.³ Title III (known as the "Thomas Amendment") of the Agricultural Adjustment Act of May 12, 1933, conferred upon the President a number of discretionary inflationary powers. Included in this Amendment were the following provisions:

1. The President was authorized to direct the Secretary of the Treasury to agree with the Federal Reserve Board and the Federal reserve banks that the latter purchase and hold additional United States obligations to the amount of \$3,000,000,000. If such added open-market purchases should result in any impairment of the legally required reserves of the Federal reserve banks, no penalty was to be applied for such deficiency.

2. The President was authorized to direct the Secretary of the Treasury to issue currency in the form of United States notes (greenbacks) to an amount of not over \$3,000,000,000 for the purpose of retiring interest-bearing United States obligations. Provision was made for the retirement of such notes at the rate of 4 per cent per year.*

3. The President was authorized to establish bimetallism with unlimited coinage of gold and silver at a ratio which he might fix.

4. The President was authorized to reduce the weight of the gold dollar to not less than 50 per cent of its gold weight. This was amended by the Gold Standard Act of 1934.

5. The President was authorized, for a period of six months, to accept silver in payment of intergovernmental debts to an amount not to exceed \$200,000,000. Silver certificates or silver coin might be issued by the Secretary of the Treasury to the amount of the debts so paid.

6. The Federal Reserve Board, on a vote of five members and with the approval of the President, might declare an emergency to exist by reason of credit expansion and might in its discretion increase or decrease reserve balances required to be maintained against either demand or time deposits. This power was obviously designed as protection against excess inflationary developments that might arise out of the use of powers conferred in earlier sections of the act.

7. All coins and currency issued under the authority of the United States were made full legal tender. This was modified

³ For the text of the Thomas Amendment, see the *Annual Report of the Federal Reserve Board*, 1933, pp. 267-268.

* Power to issue this currency was abolished June 12, 1945.

by the Joint Resolution of June 5, 1933, to include specifically under the legal tender provisions Federal reserve notes, Federal reserve bank notes, and national bank notes.

The Abandonment of Gold

The removal of the right to export gold to support the exchange value of the dollar. On April 20, 1933, an Executive Order was issued that had the effect of definitely repudiating previous actions in permitting gold to be exported to maintain the exchange value of the dollar at its gold parity. This order expressly prohibited earmarking for foreign accounts and the export of gold or gold certificates, but the Secretary of the Treasury might allow the export of gold already earmarked for foreign governments, foreign central banks, or the Bank of International Settlements. He might also authorize the export of gold for "other transactions which he may deem necessary to promote the public interest," provided the President gave approval. This order marked the end, for the time being, of attempts to maintain the gold value of the dollar. In effect it marked the abandonment of the gold standard.

The reasons for the abandonment of gold. Before April 20, the external value of the dollar was maintained within the gold points by the willingness of the Administration to permit gold exports to take place freely. To understand the reversal of this policy, one must turn to the Administration's internal problems. When President Roosevelt took over the reins of government on March 4, the banking system was in a state of collapse and business was almost at a standstill. By heroic and drastic efforts, the difficult banking situation was successfully dealt with and domestic confidence in banks was restored. But there remained the question of business stagnation, unemployment, and the burden of debt that threatened to wipe out the equities of large numbers of farmers, businessmen, and home-owners. Since September, 1931, wholesale prices had fallen 15 per cent, or from an index of 71 to 60, while farm prices had fallen 26 per cent. In contrast with the favorable price behavior in countries that abandoned gold in 1931, the experience with gold standard prices in the United States was far from satisfying. It is not surprising, therefore, that the Administration attempted to escape further deflation by suspending the gold standard.⁴

⁴ On July 3, Secretary Hull, who was attending the World Economic Conference of 1933, presented a statement from President Roosevelt in which he condemned the "specious fallacy" of attempting to achieve what he called a temporary and

Following the abandonment of gold on April 20, the foreign exchange value of the dollar in terms of gold francs fell 10 per cent, and during the month of May the exchange value of the dollar fluctuated around 85 per cent of parity in terms of gold currencies. Speculative influences, operating in the light of rising prices and the President's rejection of American participation in any stabilization proposals emanating from the World Economic Conference early in July, drove the exchange value of the dollar to a discount of 30 per cent. By the latter half of September, the dollar had fallen to 65 per cent of parity. But at this time the autumn strength of the international position of the dollar began to be felt; and during the first half of October, the discount on dollars fell to less than 30 per cent. Meanwhile the spring and summer spurt in business activity and prices had reached its peak and a recession had set in. Commodity prices reached their peak of 71.5 during the week ending September 23, and declined thereafter to 70.4 in the week ending October 21. Farm prices reached a high of 62.7 in July, but had fallen to 54.2 by the third week of October. Meanwhile, industrial production had declined from 100 in July to 76. Clearly the administrative efforts at inflation, the NRA, and the abandonment of gold were proving insufficient to produce a continuous improvement in business. Some new stimulus to prices and production was therefore in order if the promises of the Administration to provide recovery were to be fulfilled. The fall in farm prices brought with it increased agricultural discontent. Farmers' strikes appeared in protest against mortgage foreclosures. The pressure for inflation was increasing, and the President, in his broadcast speech of October 22, promised that prices would be raised. "If we cannot do it one way, we will do it another," he said. The specific method that he proposed to use was the lowering of the gold value of the dollar through the purchase of gold by the Reconstruction Finance Corporation at prices somewhat above the statutory price of \$20.67 per fine ounce.

The gold purchase plan. The first step in the accomplishment of the purpose of the Administration to raise the dollar price of gold was taken on October 25, when the Reconstruction Finance Corporation announced the purchase of domestic mined gold at \$31.36 per fine ounce. Domestic gold miners had already been

permitted to sell gold abroad at a price above the statutory price of \$20.67. This was made possible by an Executive Order of August 29, 1933, which authorized the RFC to receive gold from domestic mines on consignment for sale to domestic licensees or for export. Because the dollar at that time was at a discount of about 30 per cent in terms of the gold franc, American mined gold could be sold abroad at a price varying around \$30 per fine ounce. On October 29, the RFC announced that it would buy foreign as well as domestic gold; and the price quoted from that time on was gradually raised, reaching \$33.56 on November 14, \$34.06 on December 18, and \$34.45 on January 16, 1934. Actually, only relatively small amounts of gold were purchased by the RFC.

The question may be raised as to whether or not these small purchases of gold by the RFC were responsible for the fall in the exchange value of the dollar that accompanied them. For instance, the speculative outflow of short-term capital that occurred in November forced the value of the dollar to a discount somewhat greater than was justified in the light of the current price paid for gold. Later, when the speculative movement against the dollar was reversed with a slowing up of efforts to depreciate it, the exchange value of the dollar rose to a point considerably above its current gold price. Such differences between the exchange value of the dollar and the price paid for gold by the RFC could not have occurred had the RFC maintained anything like a free and effective gold market at its announced price. One may conclude, then, that the price paid for gold by the RFC was more important as an indication of the future intentions of the Administration than as a direct determinant of the rate of exchange.⁵

The devaluation of the dollar. The Thomas Amendment of the AAA, of May 12, 1933, authorized the President to reduce the gold content of the dollar by 50 per cent. This authorization was optional rather than mandatory and was not at that time made the basis for administrative action. Instead, the gold-purchase policy was used in an attempt to raise prices. In January, 1934, a decision was reached to try the stronger remedy of out-and-out devaluation of the dollar. To this end, Congress passed the Gold Reserve Act of 1934. The important provisions of this Act may be summarized as follows:⁶

⁵ Cf. Pasvolksy, Leo, *Current Monetary Issues*, Washington, D. C., Brookings Institution, 1933, p. 112.

⁶ For the text of the Gold Reserve Act of 1934, see the *Federal Reserve Bulletin*, February, 1934.

1. The title to all gold coin and bullion was vested in the United States Treasury.

2. The Federal Reserve Act was amended (a) to make Federal reserve notes redeemable in lawful money instead of gold certificates and (b) to require the Federal reserve banks to substitute the use of gold certificates in place of gold in satisfying the reserve, collateral, and redemption fund requirements for Federal reserve notes.

3. The Secretary of the Treasury was authorized, with the approval of the President, to "prescribe the conditions under which gold may be acquired and held, transported, melted or treated, imported, exported, or earmarked: (a) for industrial, professional, and artistic uses; (b) by the Federal Reserve banks for the purpose of settling international balances; and, (c) for such other purposes as in his judgment are not inconsistent with the purposes of this Act."

4. Gold coinage was prohibited and gold coin withdrawn from circulation and melted into bars.

5. United States currency was made redeemable in gold only as permitted by regulations of the Secretary of the Treasury approved by the President.

6. Any increases or decreases in the value of gold held by the Treasury as a result of changes in the weight of the dollar were to be added to or subtracted from the gold bullion holdings of the Treasury's general fund.

7. With the approval of the President, the Secretary of the Treasury was authorized to purchase "gold in any amounts, at home or abroad, * * * at such rates and upon such terms and conditions as he may deem most advantageous to the public interest, . . ."

8. "The Secretary of the Treasury . . . may sell gold in any amounts, at home or abroad, in such manner and at such rates and upon such terms and conditions as he may deem most advantageous to the public interest, and the proceeds of any gold so sold shall be covered into the general fund of the Treasury: *Provided however*, That the Secretary of the Treasury may sell the gold which is required to be maintained as a reserve or as security for currency issued by the United States, only to the extent necessary to maintain such currency at a parity with the gold dollar."

9. A stabilization fund of \$2,000,000,000 was established out of the profits of the devaluation of the dollar. This fund might be used by the Secretary of the Treasury, with the approval of

the President, to deal in gold, foreign exchange, other instruments of credit, and securities. The existence of the fund and the powers to use it were limited to a two-year period with the power of the President to extend the time one additional year. Subsequently, the life of the fund was extended by Congressional enactment, and was to expire in June 30, 1943.

10. The Thomas Amendment to the AAA of 1933 was amended to *require* the President to fix the gold content of the dollar at not more than 60 per cent and not less than 50 per cent of its existing figure. This power to change the gold content of the dollar within the limits fixed by the act originally was to expire in two years, with the power of the President to extend it one year more if emergency conditions seemed to require it. Three times, however, in 1937, in 1939, and in 1941, Congress extended the time of this provision, to expire finally June 30, 1943.

Under the authority of this provision, the President, by proclamation, fixed the gold content of the dollar at $15\frac{5}{16}$ grains of $\frac{9}{10}$ fine gold. The new dollar, therefore, was given a gold content equal to 59.06 per cent of its old content; and, in terms of the new gold dollar, the price of gold was fixed at \$35 per fine ounce.

The theory behind the devaluation of the dollar. The purpose of the devaluation of the dollar was clearly the desire to raise the internal price level. How, one may ask, might such action be expected to succeed? There are two approaches to the question. First, there is what might be called the "bullionist" view that prices in terms of money merely reflect the relative values of commodities and of the gold contained in the monetary unit. According to this view, the decline in prices was due to a great increase in the value of gold resulting from an increased demand following the return to the gold standard. So long as the monetary unit is tied to the value of a fixed amount of gold, it, too, must have excessive value, and the level of commodity prices will be low. But according to this theory, if the gold value of the monetary unit be reduced, then the value of the monetary unit in comparison with everything else must correspondingly fall. This appears to have been the view of Professor George F. Warren, who was an ardent advocate of the gold purchase and devaluation plan. In advocating a reduction in the gold content of the dollar, he asserted that, although prices that had not declined would probably not rise but would be freed of the necessity of falling, other prices might be expected to rise.

in this case based its decision upon the fact that before the devaluation of the dollar, Congress had legally withdrawn the rights of private citizens to hold gold coin. This being so, the plaintiff was not injured by the change in size of a gold dollar that he was not legally entitled to possess.

To shut off troublesome litigation that might arise in case some gold clause bondholder might attempt to recover by proof of actual damage arising from devaluation, Congress passed a resolution on August 27, 1935, withdrawing the right of an individual to sue the United States on gold clause securities.

*The Silver Question*¹⁰

Falling silver prices inevitably stimulate agitation on the part of silver producers that something be done to raise its value. Their efforts have been directed at (1) trying to bring about an improvement in the international market, and (2) inducing Congress to provide a bounty in the form of an artificially high price for silver for domestic coinage. In these efforts, the silver producers have frequently been enthusiastically supported by the inflationists, who see in an increase in the monetary use of silver a means of expanding the quantity of money. To make their arguments more palatable, the advocates of special measures for silver appealed for public support on the following general grounds:¹¹

1. An increase in the value of silver would increase the purchasing power of something over one-half of the world's population represented as being dependent upon the price of silver. It was alleged that this would greatly aid American export trade and promote recovery.¹²

2. Adding silver to the metallic money supply would greatly broaden the metallic base and offset the inadequacy of the gold supply.

3. It would furnish a means of controlled inflation.

The Thomas Amendment permitted the Treasury for six months to receive silver at 50 cents per ounce in payment of war

¹⁰ For a comprehensive examination of the silver question, see Leavens, Dickson H., *Silver Money*, Bloomington, Ind., The Principia Press, 1939. Also see Leong, Y. S., *Silver*, Washington, D. C., Brookings Institution, 1933, and Westerfield, Ray B., *Our Silver Debacle*, New York, The Ronald Press, 1936.

¹¹ Leavens, *op. cit.*, p. 236.

¹² The fact that China was the only important silver standard country at this time was ignored.

debts. Under this act, 22,734,824 fine ounces of silver were taken on payments due June 15, 1933.¹⁸

On July 27, 1933, the silver subcommittee of the World Monetary and Economic Conference adopted a general silver resolution, out of which arose an agreement among interested countries to refrain from putting large supplies of the metal on the world markets. Five silver-producing countries, the United States, Australia, Canada, Mexico, and Peru, agreed to withhold 35,000,000 fine ounces of silver from the market each year. The quota allocated to the United States was 24,421,410 ounces, or approximately the amount of the country's production for the year 1932.

Under this agreement, the President issued a proclamation on December 21, 1933, stating that the mints would receive for coinage into silver dollars any silver mined in the United States. One-half of the silver offered for coinage was to be retained by the mint as a seigniorage charge and the remainder returned to the owner in the form of coins or silver certificates. In substance, this action provided for the purchase of the domestic output of silver at the price of 64.5 cents per fine ounce, with payment for such purchases by the issue of silver certificates. This policy gave the domestic silver producers a subsidy of about 30 cents per ounce above the world market price. A short time later, the purchases under this proclamation were superseded by purchases under the Silver Purchase Act of 1934.

The Silver Purchase Act of 1934. Yielding to the combined pressure of inflationist Congressmen and those representing the silver-producing states, Congress passed the Silver Purchase Act of 1934 on June 19. This act declared it to be the policy of the United States to increase the proportion of silver to gold in the country's monetary stocks, with the objective of "having and maintaining" one-fourth of the monetary value of such stocks in silver. To this end, the Secretary of the Treasury was required to purchase silver, at home or abroad, at a price not to exceed its monetary value of \$1.29 per fine ounce. Further, existing stocks of silver in the United States were to be bought at a price of not over 50 cents per ounce. Silver certificates were to be issued against such silver to the amount of its cost, and such certificates were made full legal tender and redeemable in standard silver dollars.

A proclamation and Executive Order issued by the President on August 9, 1934, required all silver stocks (with a few unim-

¹⁸ Leavens, *op. cit.*, pp. 247-248

portant exceptions) to be turned over to the Treasury at the price of 50 cents per fine ounce. As a result of this nationalization act, approximately 113,000,000 fine ounces of silver was acquired by the Treasury.¹⁴ As the foreign price of silver rose under the influence of the Silver Purchase Act, the President raised the price paid to domestic producers of silver from 64.5 cents per ounce to 71.11 cents on April 10, 1935, and two days later to 77.57 cents. After January 1, 1938, however, the price of domestic silver was lowered to 64.64 cents. By act of Congress, the price paid for newly mined domestic silver was fixed at 71.11 in July, 1939.

The effect of the silver purchase policy has been to expand vastly the monetary stock of silver of the United States. Because silver dollars will circulate in small quantities only, the currency resulting from the silver purchases has been mainly in the form of silver certificates issued in amounts equal to the cost of the silver. Because prices paid for silver have been much below the statutory price of silver (\$1.29), a large quantity of silver is available to the government for coinage or for the issue of additional amounts of silver certificates should it decide to utilize the seigniorage for this purpose. In June, 1934, when the Silver Purchase Act was passed, it was estimated that 1,320,000,000 fine ounces of additional silver would have to be purchased to bring the monetary silver stock up to one-fourth of the total metallic monetary stock of the country. As a result of large silver purchases, the total monetary silver stocks (coin and bullion) on June 30, 1940, amounted to 3,100,000,000 ounces, with a monetary value, at \$1.29, of about \$4,000,000,000. But with a gold stock of about \$22,000,000,000 in 1941, to satisfy the aims of the law it would be necessary to have some \$7,000,000,000 "worth" of silver, or roughly 5,500,000,000 ounces. This would require an increase of 2,400,000,000 ounces over the amount in stock on June 30, 1940. Clearly there is little possibility of achieving the goal set in the silver purchase law, and it is to be hoped that the absurdity of the silver policy has become so apparent that Congress will see fit to repeal it.¹⁵

The United States Gold Problem

Before the devaluation of the dollar on January 31, 1934, the monetary gold supply of the United States was of modest propor-

¹⁴ *Ibid.*, p. 268.

¹⁵ For an account of the consequences of the American silver policy on China and China's subsequent abandonment of the silver standard in 1935, see Leavens, *op. cit.*, Chapters XXVIII and XXIX.

tions. At that time, the world supply of monetary gold was roughly 12 billion dollars, of which the United States held about one-third. By 1941, the situation had markedly changed. Measured in terms of the new, smaller gold dollar, the supply of monetary gold in the United States had risen; in February, 1941, to \$22,000,000,000, or over 70 per cent of the total world supply. In other words, the American supply of gold dollars increased from about \$4,000,000,000 to \$22,000,000,000 in a period of seven years.

The \$18,000,000,000 increase in our gold supply was not entirely the result of additional gold. The nominal dollar value of the existing gold stock was increased 69 per cent by the act of devaluation. This accounted for about \$2,800,000,000 of the increase.

The effect of capital imports on the gold supply. During the banking crisis of 1932-1933 and the post-crisis depreciation of the gold value of the dollar preceding devaluation, some flight of American capital occurred. This was accomplished both by the export of gold while legally permitted and by the failure to return to America claims against foreign countries arising from exports and income from old foreign investments. When President Roosevelt fixed the gold content of the dollar at 59.06 per cent of the old amount, public sentiment had so swung in the direction of a stable price of gold as to indicate a strong probability that further changes would be unlikely in the immediate future. Devaluation, therefore, became tantamount to stabilization in the public mind both here and abroad and was a signal for a reversal of the outward movement of American capital. During the six-year period 1934-1939, at least \$1,700,000,000 of American capital was repatriated.

During the same period, foreigners were showing a marked preference for investments in the United States. They purchased \$1,200,000,000 worth of American securities, and at the same time increased their holdings of American bank deposits and highly liquid paper by the amount of \$2,600,000,000.¹⁶ In addition, unidentified transactions on the credit side of our balance of payments for this period amounted to about three billion dollars, a large part of which is thought to have resulted from capital imports.¹⁷ During 1940, this movement of capital into the country continued.

¹⁶ In addition, the Federal Reserve Bank of New York held \$1,270,000,000 in gold under earmark for foreign account on May 31, 1940. This gold does not appear as a part of the monetary gold stock of the country.

¹⁷ Goldenweiser, E. A., "The Gold Problem Today," *The Federal Reserve Bul-*

About \$900,000,000 worth of gold was added to our stock of gold as a result of domestic production, the reclamation of gold scrap, and the return of gold coin.¹⁸

The favorable merchandise balance and gold imports. Between the beginning of 1934 and the end of 1940, the United States had a favorable balance of trade (an excess of exports of merchandise and services) that amounted to over 3.3 billions of dollars. The rise in this favorable balance was especially noticeable after the middle of 1937. It has resulted partially from the effect of the domestic slump in business in 1937-1938 and from war demands abroad.

The inflation aspect of the gold problem. As long as the Treasury purchases gold at \$35 per fine ounce and covers such purchases by issuing gold certificates to the Federal reserve banks, gold imports add to the magnitude of the country's bank reserves. To prevent incoming gold from swelling the excess reserves, the Treasury in December, 1936, undertook to buy gold with funds borrowed from banks by the issue of Treasury bills. Since, with this procedure, no new reserve bank deposits were created by the issue of gold certificates against the gold so purchased, bank reserves were not affected by gold imports. This practice was abandoned in 1938, however, to increase excess reserves in an attempt to combat the recession in business of 1937-1938.¹⁹

Fortunately, the size of bank reserves has been but little affected by the increase in the number of dollars arising from devaluation. Two billion dollars of the gold profit was placed in the Stabilization Fund, the bulk of which has been untouched. Of the remainder, about \$600,000,000 was used in July and August of 1935 to retire the United States bonds backing the national bank notes. To accomplish this, gold certificates were deposited with the Federal reserve banks and the Federal reserve notes issued to replace retired national bank notes thus absorbed this part of the gold profit without inflationary consequences.

letin, January, 1940. Also, for an examination of this question, see Harris, S. E., "Gold and the American Economy," *Review of Economic Statistics*, February, 1940; and Graham, F. D., and Whittlesey, Chas. R., *The Golden Avalanche*, Princeton, N. J., Princeton University Press, 1939, Chapter III.

¹⁸ Goldenweiser, *op. cit.*

¹⁹ One should notice that purchases of silver as well as gold purchases tend to increase the reserves of the banking system. As a result of the silver-buying policy inaugurated in 1934, silver certificates to the amount of over one billion dollars have been issued. These certificates are placed in circulation and replace other currency.

The problem of excess reserves. On June 1, 1940, the excess reserves of member banks stood at an all-time high of \$6,770,000,000. Excess reserves of such magnitude present a serious question of credit control. Had the reserve banks disposed of the whole of their holdings of government securities, excess reserves of over \$4,000,000,000 would have remained. Had the Board of Governors raised the reserve requirements to the maximum permitted by law, about \$900,000,000 more of the excess reserves would have been absorbed. As things stood in 1940, therefore, it was clearly beyond the powers of the Federal reserve authorities to reduce excess reserves below 3 billion dollars. For this reason, the Board of Governors proposed in January, 1941, that its powers over member banks' reserve requirements be expanded. Nothing came of this highly desirable proposal, owing to the government's opposition to any action threatening to increase the cost of the rearmament and defense program.²⁰

The growth of deposits and the danger of inflation. Not only have the excess reserves of the banking system reached unprecedented heights as a result of the tremendous increase of our gold supply, but also the volume of bank deposits has reached new records. More particularly, in December, 1940, the demand deposits of member banks stood at \$30,429,000,000. This was 83 per cent higher than the volume of such deposits at the end of 1929. Because of an abnormally low velocity of money, the low level of prices continued into 1941. As the war program leads to brisk business improvement, an increase in velocity of the present supply of deposits may support a serious price inflation. Gold imports have directly contributed to this increase in deposits. There is need, therefore, for adequate protection against the possibility of velocity inflation as well as for means of controlling added expansion on excess reserves.

The economic cost of our gold imports. Warnings have not been lacking that the United States is engaged in the grossest form of economic folly when it continues to buy such excessive amounts of gold at the high price of \$35 per ounce. Because the world is off the gold standard, the natural forces tending to reverse the flow are absent, and we may expect to receive all of the

²⁰ Some have proposed that gold be paid out into circulation and the ban on gold hoarding be lifted as a means of absorbing part of our excessive gold stocks. Such suggestions have little merit. It is questionable whether hoarding, if permitted, would absorb any very substantial part of the gold supply. To replace Federal reserve notes in circulation with gold certificates would lower the reserve ratio of the reserve banks but would in no way meet the problem of member bank excess reserves.

current and future gold output of the whole world, in addition to its present stocks. Moreover, there is the strong possibility that the world which emerges from the present war may be one which not only will be unable to afford the luxury of the gold standard but also may be so far divorced from the prewar ideas of free international exchange as to make the use of gold as money out of the question.²¹ The United States, therefore, will find itself the owner of the world's gold supply, which will have been effectively demonetized by the rest of the world. The outlook in such a case would be dismal indeed. However, it is impossible to judge the future of gold in any very accurate manner. One must keep in mind that "demonetization" of gold is not the same as the abandonment of the gold standard. The latter has quite generally resulted in the development of "sliding gold parities," as was the case in England in 1932-1939, when the Equalization Account bought and sold gold although at prices which varied to permit freedom to the domestic price structure. Demonetization, on the other hand, would mean the refusal of countries to accept gold in international settlements.²² The haste with which European countries dispatched large quantities of gold to the United States indicated a desire to safeguard gold consistent with a wish to husband gold resources. One cannot forecast the feelings of such countries toward gold, however, after they have exchanged the bulk of their supply for goods. Further, a Europe dominated by totalitarian states committed to the principle of the abolition of free capitalism, of which gold is at least a relic, might increase the prospect for the genuine demonetization of gold. But this is by no means a foregone conclusion. Regardless of the political and economic set-up, international trade is still necessary, and experience with controlled exchange and barter agreements may yet produce a reaction, even among totalitarian powers, in the direction of recognizing some of the advantages of gold as an international monetary commodity.

Proposals to stop gold imports. Gold imports have resulted from (1) the search for security, (2) the quest for the better profit prospects offered by the United States, and (3) the purchase of our export excess. None of these causes will be likely to disappear until peace and economic order are restored abroad. The simplest way to terminate gold imports would be for the Treasury to cease altogether its purchases of gold. This policy

²¹ Cf. Graham and Whittlesey, *op. cit.*

²² Cf. Heilperin, M. A., *International Monetary Economics*, New York, Longmans, Green & Co., 1939, pp. 176-178.

would certainly cause a sharp rise in the foreign exchange value of the dollar. Foreign exchange rates would be cut loose from the stabilizing influence of gold shipments and, without freedom to borrow dollars or to purchase them with gold, short-run stability of exchanges would become impossible.²³

More support is to be found for the gradual lowering of the price of gold. This procedure would tend to check gold production and lessen the gold supply available for sale to us.²⁴ Another argument in favor of lowering the price of gold is found in the fact that it would reduce the present undervaluation of the dollar and tend to reduce the magnitude of our export excess.²⁵ Yet another method of achieving the same end would be the levy of a tax upon gold imports. This, it is claimed, would reduce the attractiveness of importing gold while preserving the advantages (if any) of a high domestic price for gold.

²³ In support of this view, see Harris, *op. cit.* For a contrary view, see Graham and Whittlesey, *op. cit.*, Chapter XI.

²⁴ Out of total gold imports of \$11,129,000,000 during 1934-1940, about \$6,691,000,000 represented gold production outside of the United States. United States Department of Commerce, *Survey of Current Business*, May, 1940, p. 9.

²⁵ For a development of this view, see Harris, *op. cit.*

CHAPTER XLVII

MONETARY POLICY: INDEPENDENT CURRENCIES VERSUS AN INTERNATIONAL STANDARD

THE nineteenth century saw the flowering of modern *laissez faire* capitalism. The foundations of this development were to be found in a tremendous growth of international trade accompanied by rapid expansion of international lending. The whole structure was tied together and articulated by a common international standard of value, namely, gold. The gold standard, of course, required that price levels throughout the world move together in harmony. Failure of prices in one country to keep step with prices elsewhere brought a disturbance to the balance of payments, which in turn caused appropriate corrections in the price level. The general world movement of prices, to which the price levels of individual countries had to conform, was determined in the long run by the monetary supply of gold in relation to the monetary requirements. The short-run or cyclical price movements were governed in part by cyclical developments in different parts of the world economic structure. Particularly, however, the short-run price movements before 1914 were to a considerable degree under the influence of the London money market and the Bank of England. This condition arose from the predominant place of the British money market in financing international trade, its importance as an international loan market, and the central position of the English merchant in world trade. The monetary policies of the Bank of England, therefore, tended to be imposed upon the remainder of the world. Some writers have chosen to describe the situation as one in which the Bank of England managed the gold standard. Its management, however, was primarily designed to preserve an adequate supply of gold reserves rather than to achieve any such lofty aim as "stability," which characterizes modern plans for

monetary management. In any event, the prices of the various countries were compelled to follow the general world trend.

An international monetary system. An international standard requires a commonly recognized and acceptable money. Historically, the only money to achieve wide acceptability has been one consisting of the precious metals, with gold preferred in modern times. But this does not necessarily mean that an international monetary unit must be gold or silver. If confidence in international relations exists, it is quite possible that an inconvertible paper unit of recognized purchasing power within some powerful trading country might become an international unit for making settlements between countries. We have seen this fact well illustrated in the use of the paper pound by the Sterling Bloc during the period 1931-1939.

Difficulties arising under an international gold standard. The gold standard, though working well as an international standard, at least part of the time, was subject to two serious defects. First, it was exposed to long, sweeping changes in world price levels arising from a failure of gold to expand at a rate corresponding to monetary requirements. Second, the gold standard not only failed to give protection against cyclical price fluctuations but in some instances it tended to accentuate them. This was especially true in periods of acute deflation, when a general loss of credit confidence led to money panics and forced credit liquidation. The results of such a liquidating movement were seen in the collapse of the gold standard after 1929. Doubt as to the desirability of the international gold standard began to be expressed in some quarters before the restoration of gold in the early and middle 1920's. The subsequent collapse of the gold standard has strengthened this view, until now many economists believe that only by adopting an independent national currency can modern monetary problems be met.

The Case for Monetary Nationalism

The case for monetary nationalism (or independent paper currencies) rests primarily upon the belief that unemployment and cyclical fluctuations of the modern business world can be satisfactorily met only by a controlled and independent currency system. The gold standard, as is well known, requires that prices within the individual countries adjust themselves to harmonize with world prices. This result requires reasonable flexibility of the whole internal price structure if the strains and disturbances associated with wide dispersion of individual price movements

are to be avoided. The more readily the internal price structure adjusts itself to necessary changes, the greater the success of an international monetary standard such as gold. But there is reason to believe that prices may not be sufficiently flexible in the modern economic world to make the international gold standard tolerable. To support this view, one may refer to the experiences of the decade that began in 1929, when in fact the gold standard suffered a complete collapse. In addition, there is evidence tending to show that price rigidity is inevitably increasing.

The question of increased rigidity of prices. Several reasons may be cited for believing that the price structure of the modern world is becoming more rigid. First, there is undeniably a marked trend toward increased governmental interference in economic affairs. This takes the form both of price-fixing and of an expansion of direct governmental action in economic fields. At best, prices controlled by the government are but tardily adjusted to general price movements. When price control is used to maintain prices of agricultural products, government agencies are notoriously biased against price reductions because of political considerations. Moreover, the expansion of the scope of government services furnished to the public tends to saddle upon the business community a rigid tax burden that cannot be adjusted to commodity price changes.¹

Second, the growing power of unions, with their emphasis upon the maintenance of existing wage rates during depressions, adds a powerful influence to other forces leading to rigidity of costs. When such rates are supported by unemployment benefits paid by the government, the tendency toward rigidity is further strengthened.

Third, in modern economic society, large-scale business enterprise is the inevitable result of modern technology. The growth of large-scale business units reduces the potential number of competitors operating within any given market, and encourages the formation of price-fixing agreements and the adoption of other methods of avoiding competition. In industries dominated by a few large-scale firms, a decline in demand is likely to be met with a fall of output rather than by a lowering of prices. "Administered" prices, in which the seller fixes his price and sells what he can at that price, are common both in fields dominated by large firms and among all products bearing a brand or other distinguishing mark. Although "administered" prices do

¹ Cf. Gayer, Arthur D., *Monetary Policy and Economic Stabilization*, New York, The Macmillan Co., 1935, pp. 34-41.

fluctuate, they tend to move more slowly and through a narrower range than do prices fixed in markets where numerous traders deal in standardized, non-differentiated goods.²

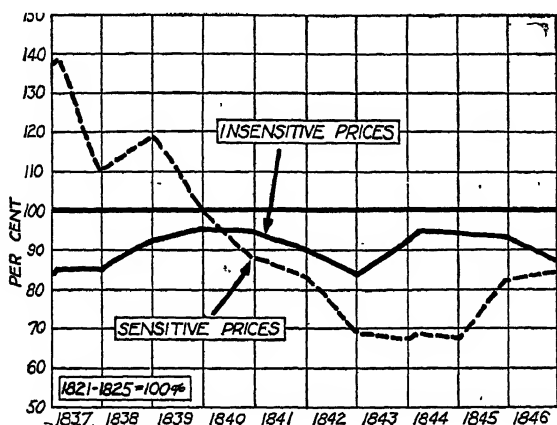


CHART 43. CONTRAST OF SENSITIVE AND INSENSITIVE PRICES, 1837-1846. Reproduced from *The Annalist*, Feb. 4, 1938, by permission of the New York Times.

Evidence of the growth of price rigidity is seen by some in the behavior of prices during the period 1828-1838. Evident stickiness is taken as an indication that the growth of large-scale pro-

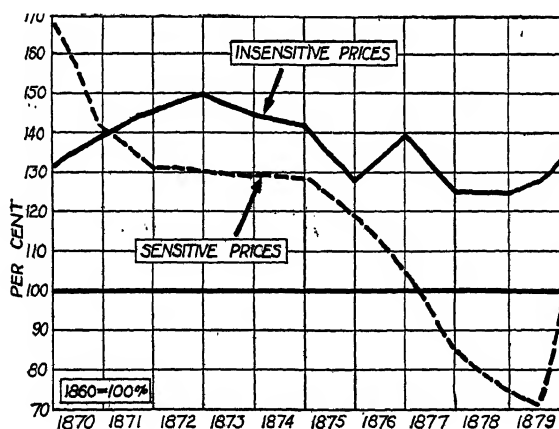


CHART 44. CONTRAST OF SENSITIVE AND INSENSITIVE PRICES, 1870-1879. Reproduced from *The Annalist*, Feb. 4, 1938, by permission of the New York Times.

² For an examination of this question, see Gardner C. Means' "Price Inflexibility and the Requirements for Stabilizing Monetary Policy," *American Statistical Association Journal*, June, 1935.

duction has been responsible for reduced flexibility of prices. This conclusion has been challenged, however. An examination of the behavior of prices over the past 100 years shows that dur-

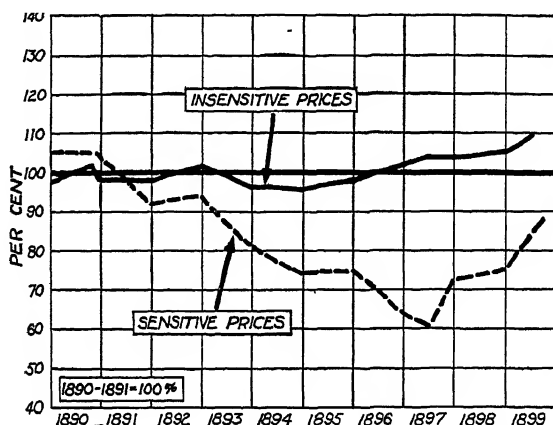


CHART 45. CONTRAST OF SENSITIVE AND INSENSITIVE PRICES, 1890-1899. Reproduced from *The Analyst*, Feb. 4, 1938, by permission of the New York Times.

ing acute depressions violent changes have occurred in prices of "sensitive" commodities while the prices of "insensitive" commodities have shown relatively little change. This result supports the view that the appearance of insensitive prices showing marked cyclical stability is by no means a new phenomenon, and that the increase in large-scale production is therefore not to be

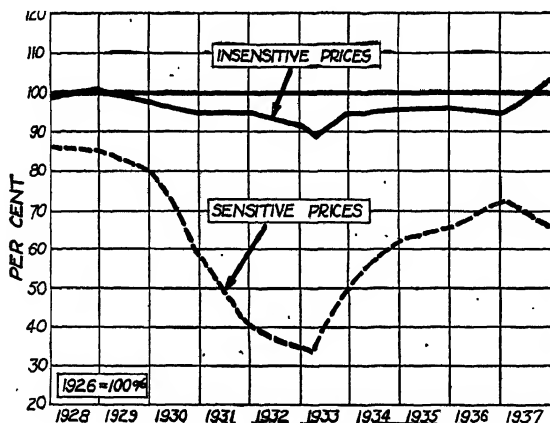


CHART 46. CONTRAST OF SENSITIVE AND INSENSITIVE PRICES, 1928-1937. Reproduced from *The Analyst*, Feb. 4, 1938, by permission of the New York Times.

blamed for the existence of insensitive or rigid prices since 1920. During the period 1926-1933, numerous examples may be cited of commodities that were produced by comparatively large and few concerns and that fell in price more than did the average of all commodities. These commodities include rubber tires, rayon, petroleum products, meats, and copper. On the other hand, the prices of apples, alfalfa seed, bakers' bread, vinegar, canned vegetables, boots and shoes, overcoats, coal, cement, brick and tile, paint, house furnishings, tableware, and paper and paper boxes fell relatively little, although these products are produced by comparatively small-scale and numerous producers. The contrast between sensitive and insensitive prices in four depressions is shown in Charts 43-46.³ The prices during the periods represented in the charts were divided into four equal groups on the basis of their decline from the beginning of the period to the low date. Commodities whose prices were thus classified included all of those appearing in the most comprehensive wholesale price indexes of each period. The sensitive and the insensitive prices shown in the charts are the average prices of the groups showing the greatest and the least decline, respectively. It would be unreasonable to hold that inflexible debts, prices, wages, and tax burdens did not constitute a serious impediment to the restoration and maintenance of economic equilibrium under the gold standard. Nevertheless, in the light of Mr. Tucker's evidence, one may very properly doubt the complete validity of the often heard and popular assumption that new and growing inflexibility in prices, caused by the extension of large-scale production after the First World War, made the postwar gold standard unworkable. The breakdown of the gold standard after 1929 may more properly be laid to the vulnerability of many countries to the unusually severe deflationary forces in operation than to any sudden increase in price inflexibility.

Economic stabilization and independent currencies. Present-day discussion of monetary policy centers around the problem of how to achieve full employment and economic stability. The proper approach to this problem is generally held to be along the road toward stabilization of prices and control of the discount rate. These goals are designed to smooth out fluctuations in investment and to bring about and maintain an equality between

³ See Rufus S. Tucker's "The Essential Historical Facts About 'Sensitive' and 'Administered' Prices," *The Annalist*, February 4, 1938.

saving and investment. Adherence to an international gold standard requires that internal prices and discount rates be adjusted to conform to the requirements of outside price movements and trade balances. Disequilibrium in the balance of payments under the gold standard is corrected in the last analysis by adjustments in the price level. In the view of some economists, this introduces an almost insuperable barrier to attempts at domestic stabilization. On the other hand, these economists believe that flexible exchange rates furnish a painless and swift method of restoring equilibrium in the balance of payments. Many advocates of monetary management, therefore, reject entirely all thoughts of an international monetary standard such as gold.⁴ They shed few tears over the abandonment of the gold standard because they believe that a growing rigidity of prices and other developments have made its maintenance impracticable anyway, regardless of attempts at management.

An independent currency system, under which the internal price level is stabilized while world prices fluctuate, necessarily requires flexible and fluctuating exchange rates. Those who hold that the only hope of achieving internal stability lies in the adoption of an independent currency believe that the choice lies between unstable internal prices with stable exchange rates and stable internal prices with unstable exchange rates.⁵ The choice of a free independent currency instead of an international standard is, therefore, not an unmixed blessing, for it offers an opportunity to exercise greater control over domestic prices and interest rates at the price of exchange stability, one of the most significant benefits of the gold standard.

Domestic Stabilization Under an International Standard

The advocates of monetary nationalism believe that an independent currency is a prerequisite to successful monetary management. This opinion is based on the belief that international monetary stabilization is impossible, and that independent action

⁴ Cf. Bernstein, *Money and the Economic System*, Chapel Hill, N. C., University of North Carolina Press, 1935, pp. 463-464, and Whittlesey, Charles R., *International Monetary Issues*, New York, McGraw-Hill Book Co., 1937, for two American writers who emphatically reject the international gold standard.

⁵ Of course, if the rest of the world were also to adopt a successful policy of stable prices, stable exchange rates might be possible in the face of domestic stabilization efforts. Cf. Keynes, *Monetary Reform*, New York, Harcourt, Brace & Co., 1924, pp. 167-168. For an excellent discussion of the connection between international monetary and price relationships and a policy of stabilization, see John H. Williams' "International Monetary Organization and Policy" in *Lessons of Monetary Experience*, New York, Farrar & Rinehart, 1937, Arthur D. Gayer, ed.

by one country alone requires the freedom that can be provided only by an independent currency. Before accepting this claim at full face value, one must inquire more fully into the possibilities of (1) domestic control while operating within an international monetary system and (2) international co-operation.

Secular price trends and domestic stabilization. Any attempt under the gold standard to regulate the price level of a single country so that it will run counter to the secular trend of world prices must sooner or later fail. If world prices are rising, stable domestic prices would eventually tend to impose an intolerable supply of gold upon the domestic banking system. On the other hand, if world prices are falling, stable domestic prices must sooner or later cause such a loss of gold by the domestic banking system as to require the abandonment of the gold standard. But this is not of such vital importance as might appear at first thought, for the primary problem of stabilization has to do with relatively short-run cyclical price movements.

Domestic cyclical stabilization and the gold standard. Contrary to the common assumption of those advocating an independent currency system, a considerable measure of control over cyclical fluctuations remains in a domestic monetary authority in spite of an adherence to an international monetary system. First, booms that originate within a country can be as effectively counteracted under the gold standard as on inconvertible paper. Similarly, recessions originating at home can be met with the full battery of monetary weapons regardless of whether gold or paper standards are in use. But, one may ask, what becomes of stabilizing efforts when cyclical disturbances arise from the outside? At such a time, a decline in domestic prices and business activity will be inevitable under the gold standard. The degree to which the domestic economy will suffer depends, of course, upon the relative importance of foreign trade. But even under the gold standard, monetary authorities are not entirely helpless in the face of world-wide depression. A lowering of interest rates through open-market operations of the central bank may be expected to have a stimulating effect on investment. If supplemented by public works expenditures, the domestic economy could be stimulated regardless of the adherence to gold.⁶ Inconvertible paper would, of course, offer two advantages over gold in this connection. First, it offers the rather questionable op-

⁶ Cf. Keynes, *Treatise on Money*, New York, Harcourt, Brace & Co., 1930, Vol. II, pp. 375-376, for a recognition of this point.

portunity to stimulate exports by resort to exchange depreciation. Second, it would avoid the deflationary consequences of a loss of gold arising from an excess of imports due to a revival of business and a rise in domestic prices. But gold losses due to business revival need not be serious, for a rising security market and improved profit prospects will attract rather than repel foreign investments. Even though some gold losses do occur, they need not prove detrimental to recovery so long as they do not exceed the power of the central bank to meet them out of excess reserves. For this reason, a proper distribution of the world's gold reserves is a desirable thing if cyclical stabilization is to be sought. One can hardly concur with the smug and oft-repeated statement of advocates of independent currencies that cyclical stabilization by monetary means is entirely impossible under an international standard. Nevertheless, the advantage in this regard clearly rests with inconvertible paper. This is especially well indicated by the experience of the 1931-1936 period, when the abandonment of gold contributed heavily to the success of attempts to promote recovery.

Monetary Management Through International Co-operation

Some difficulties of international co-operation. The case for independent currencies rests largely upon the proposition that international co-operation is unable to produce a satisfactory international currency. Some reasons for lack of faith in such co-operation are:

1. Nationalism presents a powerful barrier to anything like effective co-operation among nations on matters of monetary policy. One need but recall the criticism in some quarters of attempts by the Federal Reserve System to co-operate on monetary policy with foreign central banks during the restoration of gold in the 1920's to realize the practical difficulties that exist. Jealousy, fear that the interests of foreign countries do not coincide with one's own, and popular distrust of "foreign theories" all complicate the problem of co-operation.

2. Even if an international monetary agreement could be reached, the gold standard itself is not entirely amenable to management. Gold output rises and falls without regard to monetary requirements. Hoarding and industrial demands for gold cannot be controlled. There is the potential menace of capital flight from any country whose currency comes under suspicion.

3. Genuine differences in the economic situation in the several

countries may require different monetary policies in order to achieve full employment and stability in each. An example of this is the problem raised in respect to countries that enjoy different rates of economic progress. A monetary policy suited to a country in which economic efficiency is advancing rapidly would be objectionable in a country in which improvements are appearing more slowly.

Even though all of these objections are serious ones, they do not rule out entirely the possibility of international monetary co-operation. Nor should the fact that current circumstances make the prospects of such co-operation at the moment exceedingly dim prevent serious consideration of the problem. If any genuine improvement in economic affairs is to be accomplished through rational methods, long-run aims cannot be dismissed merely because they are momentarily impracticable. Little of genuine value is likely to come out of temporization on the basis of short-term situations alone.

Possible methods for international co-operation. Once serious attempts at international co-operation become possible, several methods of action present themselves.

1. Discount and open-market policies of the important central banks can be utilized to regulate credit conditions within their respective countries. If price stabilization is chosen as the goal, the combined efforts of the central banks should be able to check unhealthy expansions. Depression, in turn, may be offset by easy money policies; and, if international co-operation is seriously followed, public works by government action should assist in promoting revival.

2. In support of the central banks' instruments of credit control, international agreement may well be used to change the gold content of the several currencies whenever the gold output threatens to become too small or too large and so to interfere with the credit policies of the central banks. If the gold content of all currencies is shifted proportionately, there will be no interference with the international character of the world's monetary system.⁷

3. Measures ought to be taken to protect the monetary system of each country from unnecessary and excessive gold drains that

⁷ Professor R. A. Lehfeldt once proposed that the long-run changes in the value of gold might be avoided by international control of the output of the world's gold mines. *Gold, Prices, and the Witwatersrand*, London, P. S. King & Son, Ltd., 1919, Chapter V.

might impose a drastic and undesirable liquidation of prices and credit. Gold points might be widened by establishing a greater spread between the buying and selling prices of gold of the central banks. This policy would introduce greater "give" to the exchange rates and thus allow more room for short-run disequilibrium in the balance of payments before gold would move.⁸ Critics of this proposal, however, feel that the advantages would be offset by an undesirable increase in short-term balances. An adverse balance of payments in one country under the gold standard leads to the inflow of short-term capital into that country. With wider gold points, the incentive to accumulate such balances would become still greater. The encouragement of such short-term balances, though economizing on gold movements when disturbances to the balance of payments are seasonal and temporary only, may create a greater threat to the maintenance of gold payments in case the adverse balance out of which they are built develops into a basic non-seasonal one.⁹

4. Yet another possibility, and in many ways a more significant one, is that some international reserve bank, holding part of the central banks' gold reserves, might offer rediscount or loan facilities to banks whose reserves are threatened by gold drains. Central banks whose gold reserves were reduced to the point where some multiple credit liquidation threatened might borrow to meet their adverse clearing balances. Such banks would then be free to institute internal credit restriction equal to the adverse balance, rather than to some multiple thereof. This arrangement would permit the inauguration of forces leading to correction without the multiple liquidation of credit that may precipitate serious deflation. Indeed, a necessary part of international credit policy based upon co-operation of central banks is an expansion in purchasing power within a country equal to its favorable balances and a decrease equal to any adverse balances that may be suffered.¹⁰

⁸ Cf. Keynes, *Treatise on Money*, Vol. II, pp. 319-331.

⁹ Cf. Whittlesey, *International Monetary Issues*, pp. 115-117. He holds that the correct way to eliminate speculative short-term balances (not based upon fear of abandonment of gold) is to abolish the gold points altogether. In contrast to this view, Hayek suggests that such speculative short-term balances may be eliminated by eliminating the spread between the gold points. This could be simply accomplished by having central banks buy and sell foreign exchange freely at fixed rates, while undertaking to pay the costs of gold shipments. See his *Monetary Nationalism and International Stability*, New York, Longmans, Green & Co., 1939, pp. 84-85.

¹⁰ Cf. Hayek, *op. cit.*, pp. 86 and 89-90.

Some Objections to Independent Currencies

The inflationary bias of flexible exchanges. Stressing cost and wage rigidities as the essential reason for the need for an independent currency, the advocates of such a currency are primarily concerned with the desirability of avoiding the depressing effects of price deflation. Because of this, the pursuit of a national policy of stabilization may lead to the development of an inflationary movement in domestic prices.

Let us suppose, for example, that a country using an independent currency system develops an adverse balance of payments because of a decline in the foreign demand for some of its exports. Under an international standard, corrections would occur in the form of a decline in internal prices, with the greatest decline occurring in those commodities whose foreign demand has diminished. But with an independent paper standard, the restoration of equilibrium will occur through a rise in the foreign exchange rates. The rise in foreign exchange rates will (1) prevent a fall in the prices of the export commodities whose demand has declined, (2) increase the cost of imports and therefore reduce their volume, and (3) stimulate exports whose foreign demand has not diminished. All of these results give encouragement to domestic industry. With lagging costs, those industries whose prices actually advance will receive unusually large profits, and a general expansion will tend to develop. Unless the monetary authority, therefore, takes stern restrictive measures, a domestic boom, with its well-known self-reversing characteristics, will result. But the rise in foreign exchange rates, with its inflationary effect on the domestic economy, was permitted in order to prevent a fall in prices in that branch of the export trade whose foreign demand had fallen away. Any credit restraints designed to hold in check the threatened rise in the general domestic price level will necessarily cause a fall in the price of exports for whose benefit a flexible exchange rate is designed. Since it is the announced purpose of the monetary nationalism to avoid reducing prices and wages because of a change in the international situation, it is difficult to believe that appropriate deflationary measures would be adopted by the monetary authority.¹¹

The above source of economic instability, which seems inherent in attempts to escape deflation by the use of independent currencies with flexible exchange rates, must be set against the

¹¹ Cf. Hayek, *Monetary Nationalism and International Stability*, pp. 35-53.

expected gains. In case the fall in demand applies to all exports, owing to world business depression, this source of disturbance becomes unimportant. In such a case, the inflationary aspects would be overshadowed by general deflationary conditions. Since it is with this last contingency that monetary management is vitally concerned, the advantages of monetary management should outweigh the disadvantage discussed above.

Independent currencies and long-term lending. Perhaps the gravest criticism of independent currencies concerns their effect upon international capital movements. Both long-term and short-term capital movements will be influenced by a shift from the gold standard to independent currencies. The reason for this lies in the inevitability that pure paper currencies will be accompanied by fluctuating exchange rates. But when the hazards of uncertain exchange rates are added to the ordinary hazards of foreign long-term lending, it may well be that such lending will be sharply curtailed. If so, this is a serious basis for criticism of independent standards. Modern capitalism has reached its high level of effectiveness through international division of labor supported by generous movements of capital from the older areas into the undeveloped, frontier areas. The stagnation in world economy after 1929 to no small extent can be blamed upon a drying up of international lending. The abandonment of an international standard, such as gold, may be expected to furnish an added barrier to such lending.

Advocates of independent currencies, however, refuse to be impressed with the danger to foreign lending. First, they admit that the gold standard, with its stable exchange rates, may have performed yeoman's service during the nineteenth century, while capitalism was growing to maturity, but point out that today that growth is tapering off. As a result, international capital movements are no longer so essential. In fact, there is some evidence that modern capital movements are of slight advantage. Much of the lending done during the 1920's went for unproductive uses, with subsequent embarrassment to borrower and lender alike. Moreover, there seems to be a spreading disbelief in the ability of a lending country to adjust its balance of payments readily in the face of a sizable expansion of foreign loans. This fear of disturbance to the lending country's balance of payments is closely associated with the idea that prices and costs are growing in rigidity. From this line of reasoning it is concluded that *laissez faire* in international leading is undesirable. Further, it is noted that the workers in a country lending abroad are being

deprived of higher incomes at home for the benefit of workers abroad. In other words, while capital may be more productively employed abroad, it by no means follows that the welfare of the population at home is actually bettered.¹²

Advocates of independent currencies, however, will not always admit the validity of the common assumption that long-term lending must languish in the absence of the international gold standard. They see as causes of the decline in foreign investment of the 1930's such things as the world-wide depression, trade barriers, former losses, and, to a lesser extent, fear of fluctuating currencies. Foreign loans are customarily expressed in terms of the lender's currency. Since this is so, it matters little to the purchaser of foreign securities of this type whether or not the lending or the borrowing country is using an independent currency. So long as he is assured of a fixed amount of his own currency in payment, the lender can ask for nothing better either at home or abroad. The borrowers, however, are in such a case exposed to the danger of fluctuating exchange rates. Yet even here there need be no serious danger. If the lending country has an independent currency, there is small likelihood that it will suffer any marked deflation of prices. Therefore, there seems to be little risk that the exchange rate on the lending country will rise sufficiently to increase the debtor's burden to any serious degree. On the other hand, if a fall in the exchange value of the borrowing country's currency in terms of the lender's currency should occur, it would presumably be due to a rise in prices within the debtor country. But such rising prices would provide windfall profits of sufficient magnitude to offset the adverse exchange rates. Finally, foreign investment need not take the form of fixed-income-bearing securities. Investment in foreign stocks and property is by no means uncommon. On such investments there seems to be no reason to expect prohibitive hazards arising out of fluctuation in exchange rates.¹³

Independent currencies and short-term capital movements. The collapse of the gold standard after 1929 was in no small measure immediately due to the flight of short-term balances from countries whose monetary systems came under suspicion. Attempts to withstand this flight led to highly deflationary pressure and caused the serious forced credit liquidation. These

¹² Cf. Keynes, *Treatise on Money*, Vol. II, pp. 306-315. Also see Whittlesey, *International Monetary Issues*, pp. 150-152.

¹³ For a competent development of this whole argument, see Whittlesey, *op. cit.*, pp. 159-170.

short-term balances are a natural and indispensable part of the international banking mechanism. Their volume, however, increased during 1929 and 1930, owing to the unwillingness of lenders to tie themselves to long-term commitments. After the panic had seized the international financial markets during the years 1931-1932, the volume of short-term balances was still further augmented by the action of frightened individuals who sought refuge from the hazards of holding their own currency in converting it into liquid holdings abroad.

Advocates of the use of independent as contrasted to an international currency profess to see no way to avoid a repetition of the experiences of 1929-1933 save by a complete abandonment of the gold standard. Only thus, it is said, can fear be rendered impotent to disturb the stability of a country's economic system. The adoption of an independent currency and flexible exchanges would reduce the accumulations of short-term foreign exchange balances by removing the fixed gold points that make possible the accumulation of bankers' arbitraging balances. With independent currencies, the bulk of the short-term balances would be those of exchange speculators. The very hazard of holding foreign exchange in the face of flexible exchange rates would tend to discourage the practice.

Advocates of independent currencies are inclined to dismiss lightly the fact that such currencies may be and have in fact been the object of speculative movements of great magnitude arising from the flight of capital. They hold that experience with gold during the last few years shows that it, too, is exposed to the pressure of capital flight in times of depression. But this is hardly a fair picture of the relative susceptibility to capital flight of the two types of currency. Inconvertible paper currency, unless carefully managed and protected, is always exposed to the danger of capital flight. Gold currencies, in normal times, are not so exposed to speculative pressure. It is only in time of acute depression that they come under suspicion.

In conclusion, the flight of capital was responsible for much trouble during the period beginning with 1931. It is unlikely, however, that the abandonment of gold offers any remedy for this danger. Speculative pressure, which may reach very large and disturbing proportions, is a constant threat to free exchange rates based upon independent currencies. Such exchanges are exposed to every breath of suspicion that arises, and are, therefore, subject to violent and unpredictable fluctuations. Satisfactory short-run stability of exchanges cannot be expected

without resort to some form of exchange control mechanism, such as the stabilization funds with whose operations we are already familiar. But the resort to exchange control to check short-run exchange fluctuations introduces complications in the problem of obtaining the maximum benefits from the use of an independent paper currency to combat a general depression. Efforts to induce internal prices to move contrary to the movement of prices abroad must be coupled with a conscious depreciation of the exchange value of the domestic currency if the best results are to be obtained. But exchange depreciation as an instrument of national policy has serious objections. Any actual undervaluation of the currency, whether intentional or unintentional, will still further disturb the economies of foreign countries. Moreover, any depreciation of a controlled exchange rate, whether it results in undervaluation of the currency or not, is almost certain to provoke unfavorable reaction abroad with reprisals in the form of higher tariffs, quotas, and competitive exchange devaluation.¹⁴

Independent currencies and seasonal factors. International trade is not something that moves smoothly and regularly, with a constant balance between imports and exports. Instead, it is irregular in nature, conforming to seasonal forces that influence both demand and supply. Consequently, there is no daily, weekly, or even monthly balance between import and export items. Under the gold standard, it is sufficient for the trade and long-term capital items entering the balance of payments to be equalized over a fairly long period of time. This is true because of (1) the willingness of bankers to allow credits to accumulate within a country having an adverse balance, in the expectation that later in the season the situation will be reversed, and (2) the possibility of shifting gold when necessary to meet adverse balances. But, on the other hand, an independent currency with free exchanges discourages bankers' balances. As a result, either (1) exchanges must fluctuate widely enough to create an equality between import and export items over short periods of time; (2) some form of exchange control must be initiated to force a short-run equality of import-export items; or (3) a stabilization fund must be set up to take the place of the banker who operates under the gold standard to provide short-run stability of exchange. Clearly, the use of exchange stabilization funds offers

¹⁴ Cf. Heilperin, M. A., *International Monetary Economics*, New York, Longmans, Green & Co., 1939, pp. 233-237.

the most practicable way to meet the problem raised by independent currencies.

Independent currencies and the influence of foreign cyclical price movements. One important advantage claimed for the use of independent currencies is that it frees the domestic economy from cyclical price movements originating abroad. Is there good reason to believe that this assumption is true? In answering this question, one must take into account the fact that an individual nation is by no means a closed economy dealing only with itself. Instead, all nations must deal with others, and are parts of the larger world economy. Regardless of whether or not a country adopts an independent currency with flexible exchanges, a depression abroad will adversely affect the export market. Conversely, boom conditions abroad stimulate exports and domestic business. Monetary management, with or without an independent currency system, can prevent a foreign-generated boom from spreading to the domestic economy. It is unlikely, however, that it can avoid the disturbing consequences arising from a severe depression abroad.

The problem involved in attempts to insulate one country from the effects of economic fluctuations abroad is well stated by Professor Hayek. "The truth of the whole matter is that for a country which is sharing in the advantages of the international division of labor it is not possible to escape from the effects of disturbances in these international trade relations by means short of severing all the trade ties which connect it with the rest of the world. It is of course true that the less the point of contact with the rest of the world, the less will be the extent to which disturbances originating outside the country will affect its internal conditions. But it is an illusion that it would be possible, while remaining a member of the international commercial community, to prevent disturbances from the outside world from reaching the country, by following a national monetary policy such as would be indicated if the country were a closed community. It is for this reason that the ideology of Monetary Nationalism has proved, and if it remains influential will prove to an even greater extent in the future, to be one of the main forces destroying what remnants of an international economic system we still have." ¹⁵

¹⁵ *Monetary Nationalism and International Stability*, Longmans, Green and Company, Inc., New York, 1939, pages 70-71. Quoted by permission of the publishers.

Conclusion. An examination of the probable limitations of an independent currency indicates that the claims of its more enthusiastic advocates are unwarrantedly sweeping. It is clear, however, that the abandonment of gold will remove one important cause of deflationary pressure of the kind that arose during the acute depression period of 1929-1936. Nevertheless, it appears to be something of an exaggeration to claim that flexible exchanges offer a simple, painless, and non-disturbing means of restoring equilibrium to the balance of payments, while gold is unable to do so without serious disturbances. Also, it is necessary to keep in mind that flexible exchanges are likely to aggravate rather than to remove the troublesome problem of short-term capital flight.

An ideal system would seem to call for some form of a managed international currency. So long as international co-operation to provide such a stable monetary standard is impracticable, there is a fair argument in favor of retaining independent currencies that lend themselves to domestic efforts at stabilization better than does an international currency. It would be unfortunate, however, if the limitations of independent currencies as a solution of a troublesome monetary problem were not recognized.

CHAPTER XLVIII

INSTRUMENTS AND METHODS OF INTERNAL MONETARY MANAGEMENT

WHETHER an independent or an international currency system is in use, the modern world does not permit an escape from some degree of monetary management. Essentially, all efforts at monetary management are national in nature, with international co-operation but an extension and a co-ordination of management policies of individual countries. Before taking up the proper *standards* for monetary management, it will be helpful to examine the methods that may be used to exercise the desired control.

Some methods of monetary and credit control have long been in common use and are, therefore, generally familiar. Others, however, are suggested procedures that remain as yet untried. The most significant of these methods are:

1. The use of the credit policy and powers of the central bank.
2. The use of fiscal operations of the treasury.
3. The introduction of a stabilized dollar of varying gold content, or its modern counterpart—the fluctuating exchange rate.
4. One hundred per cent money.
5. Public works projects as supplements to other controls.
6. The use of a currency redeemable in a fixed quantity of representative commodities.

The Central Bank as an Instrument of Monetary Control

The place of bank credit in the monetary system needs no further examination at this point. It is also unnecessary to repeat here the discussion of the manner in which central bank credit policy, as reflected in commercial bank discount rates, may be expected to influence business activity and the price level. That question was extensively explored in Chapter XXXV. It is desirable, however, to consider the question of how extensive

a control central banks can, in fact, exercise over the market rate of discount charged by the commercial banks.

Central banks' contact with the money market. First, it is clear that control over the discount rate depends primarily upon the central bank's being in contact with the money market. This means simply that the central bank's control rests on its ability to vary the volume of commercial bank reserves that support the credit superstructure. Whenever the commercial banking system is dependent upon central bank credit for its required cash reserves, the central bank is in contact with the money market and is in a position to exercise some credit control.

In the United States, two ways of keeping in contact with the money market are open to the Federal Reserve System. First, if the reserve banks lower their rediscount rates and purchase bonds in the open market, member banks may be encouraged to expand their loans and deposits upon the basis of cash reserves made up of Federal reserve bank credit. Second, member bank legal reserve requirements may be raised by action of the Board of Governors of the Federal Reserve System. This absorbs excess reserves and tends to drive member banks to rediscount. Whenever excess reserves of member banks are too great to be absorbed readily by an increase in reserve requirements or by the sale of bonds by the reserve banks, the reserve banks are no longer in a position to exercise any serious control.¹

Weapons of control of the Federal reserve banks. Whenever the central bank is in actual contact with the money market, it is in a position to influence the volume and the cost of the marginal loan funds of the commercial banks. Normally its influence will be exercised by varying the rediscount rate and by the purchase and sale of securities in the open market. The increase in the rediscount rate raises the cost of any additional reserves needed by an individual bank to expand its loans. The profitableness of borrowing to expand loans thus becomes somewhat less, unless customers' rates are also increased.² Open-market operations provide an additional powerful weapon of credit control. When the central bank expands its holdings of government

¹ During times of plentiful excess reserves, some slight degree of control may be exercised by the reserve banks by varying the volume of the excess. This can be done so long as the banks show any preference for the unusual liquidity offered by a plentiful supply of excess cash reserves.

² This statement disregards the possibility of multiple expansion of loans and deposits that may occur if banks in general expand "in step." For a discussion of the question of the effectiveness of the rediscount rate, the student should refer again to Chapter XXII on Federal reserve credit policy.

securities, member banks are enabled to reduce their borrowings and rediscounts. On the other hand, the sale of securities results in a shrinkage of member bank reserves and compels members to expand their borrowings and rediscounts at the reserve banks. Because banks dislike remaining in debt to the Federal reserve banks for too long a time, and because, when borrowing, they are exposed to the higher discount rates that generally accompany the sale of bonds by the reserve banks, open-market sales of securities by the reserve banks impose restraints upon member bank credit and lead to an increase in customers' rates. When, on the other hand, the reserve banks purchase securities in the open market, member banks are able to reduce their indebtedness at the reserve banks and to adopt an easier money policy.

The effectiveness of central bank credit policy. When in contact with the money market, central banks are able to exercise effective restraint over the volume of credit created by the commercial banking system. Further, any relaxation of restraints will normally tend to encourage credit expansion whenever such an expansion seems called for in the interests of business conditions. We have an example of the effectiveness of central bank credit policy during the middle 1920's, when the Federal Reserve System was successful in its attempts to introduce reasonable stability into the American business system. But in times of severe depression, there are narrow limits to the powers of central banks to induce an expansion of credit. They may lower rediscount rates and increase commercial bank reserves by expanding their purchases of open-market bonds, but they cannot compel businessmen to borrow or the bankers to lend.

Even in times of serious depression, the easy money policy of central banks sometimes appears to be effective when the commercial banks utilize their excess reserves to purchase bonds. This action, like an expansion in commercial loans, leads to an increase in demand deposits of the banking system. Measured quantitatively, such a result would seem to prove that central bank policy is operating successfully in expanding the quantity of money in the face of depression. Actually, however, this quantitative expansion may not be so very important in encouraging a revival in business and prices. Banks purchase seasoned securities that have been held by investors. Any deposits created by the purchase of such bonds, therefore, are unlikely to be employed in the new business expenditures required to promote business recovery. Only when these investors replace the

securities that they sold to the banks with newly issued securities will the newly created deposits be of any effect in restoring normal business activity.

Central bank credit policy is, of course, subject to the limits imposed by the bank's legal or customary reserve requirements and by the available volume of standard money reserves. This limit is particularly significant when gold is used as standard money. Under independent paper currencies it becomes unimportant, for either the note issues of the central bank itself become standard money, or some adequate supply is provided through the government.

The Fiscal Operations of the Government as an Influence in Credit Control

The fiscal operations of the government frequently modify the effect of central bank policy. For instance, the assembly of government funds through taxation or borrowing requires that these funds shall be carried while awaiting disbursement. If they are deposited in the commercial banks, the reserve position of the banking system will not be affected. If, however, the Treasury deposits part of its idle funds in the central bank, there results a decline in the reserve balances of the commercial banks by an amount equal to such deposited funds. On the other hand, the subsequent spending of these funds restores bank reserves to their former position.

The intentional use of government funds to modify the volume of bank reserves is illustrated by the sterilization of gold imports practiced between December, 1936, and April, 1938. Gold imports had built up the reserve balances of member banks to a point considered undesirable. The Treasury, therefore, undertook to purchase newly imported gold with funds obtained by the sale of Treasury bills in the open market. The deposits created by the purchase of these bills by the commercial banks were exchanged for imported gold. Member banks, therefore, received Treasury bills in place of added reserve balances at the Federal reserve banks.

The Stabilized Dollar

Fisher's plan for stabilizing prices. One of the earliest proposals for introducing control over the domestic currency in a gold standard world was that of Professor Irving Fisher.³ Briefly, his plan contained these proposals:

³ *Stabilizing the Dollar*, New York, The Macmillan Co., 1920.

1. The currency should consist of dollar certificates redeemable in a dollar's worth of gold.

2. The amount of gold contained in the dollar should be varied from time to time in such a manner as to offset and prevent price movements.

3. Whenever wholesale prices rise, the weight of the gold dollar should be increased. Whenever the wholesale price index falls, the weight of the gold dollar should be reduced. The suggested maximum amount of increase or decrease in the weight of the dollar is 1 per cent every two months until the rise or fall in prices is checked.

4. To prevent speculators from taking advantage of the prospective changes in the gold content of the dollar, a spread of 1 per cent should be maintained between the buying and selling price of gold in terms of dollar certificates.

Two reasons can be given for thinking that changes in the gold content of the dollar might be effective in stabilizing prices. First, a lowering of the gold content would lower the foreign exchange value of the dollar and result in its undervaluation. The stimulating effect on exports and the restrictive effect on imports resulting from this undervaluation would assist in raising domestic prices. Second, lowering the gold content of the dollar would leave unused or free gold in the Treasury against which new dollar certificates might be issued. These could be spent in lieu of taxes and would have an inflationary effect. An increase in the gold content of the dollar, on the other hand, might be expected to have an effect just the opposite from that of decreasing it.

Criticisms of the stabilized dollar. There are several grounds for criticism of the stabilized dollar. For example, it is argued that if a strong upward movement of prices were to develop, speculators would feel assured that successive increases in the gold content of the dollar were to be forthcoming over a period of several months. In such a case, it would be profitable to import gold and convert it into dollars in anticipation of the future increase in gold content. The quantity of funds available to the banks would, therefore, rise rather than fall, and the inflationary movement would be accentuated rather than reduced. Similarly, once a fall in prices got under way owing to a domestic depression, the prospects for a continued lessening of the gold content of the dollar would tend to induce speculators to export gold to be held abroad until the reduction in weight of the dollar was believed to

have been completed. But the export of gold would exert a further deflationary influence at a time when prices were already falling. This criticism alone indicates something of the probable weakness of such a plan as a means of combating short-run or cyclical price changes.⁴

Another reason for expecting changes in the gold content of the dollar to be of little effect in preventing and correcting short-run price changes lies in the fact that such changes would have but little effect upon the volume of bank reserves, even if the above-mentioned speculative gold movements did not materialize. Wide cyclical changes in money, credit, and prices frequently occur with little if any changes in the size of the standard gold base.

Control of Prices Through Control of Foreign Exchange Rates

In any attempt to attain independent currencies and monetary management, flexible exchanges may be expected to play a part. But this is not to say that manipulation of exchange rates is expected to take an active role in such a case. Rather, exchange fluctuations are thought of as a necessary though passive accompaniment in monetary management. Nevertheless, there are some who advocate exchange manipulation as a means of controlling prices. The experience with exchange depreciation has already been examined in Chapters XL and XLI and needs little further discussion at this point. In general, one may properly doubt the possibility of regulating, controlling, or stabilizing internal prices of a large country by exchange manipulation. However, in a small country whose total trade is largely in commodities that move in international trade, some success might be expected from skillful exchange control. In such a country, if the central bank or exchange-control agency were to lower the foreign exchange value of the currency, prices of important export and import commodities would rise, and with them, general prices. Similarly, to avoid price inflation would simply require that the foreign exchange value of the currency be raised appropriately.

⁴ This criticism was voiced by the late Professor James Harvey Rogers in testimony during the Hearings before the Committee on Banking and Currency of the House of Representatives on H. R. 11788, 67th Congress, 4th Session. Cf. Slichter, Sumner H., *Modern Economic Society*, New York, Henry Holt & Co., 1928, p. 531. Fisher, however, argued that such speculative action was unlikely, since gold price levels seldom changed 5 per cent in a year and never as much as 10 per cent. Thus, the speculator's chance of gain would not be great enough to induce him to take a position committing himself to changes of more than two months. *Stabilizing the Dollar*, p. 143.

Sweden, after 1931, is thought to have controlled its exchange rate with the purpose of influencing its internal price level.⁵ This action, however, was coupled with a positive central bank credit policy. It is unlikely that control over the exchange rate alone, without close co-operation of central bank credit policy, could be expected to succeed.

100 Per Cent Money

A radically different means of establishing control over the quantity of money has been suggested by the advocates of the 100 per cent reserve plan of banking reform.⁶ The present supply of "effective money," it is pointed out, consists primarily of demand deposits in banks. The volume of such deposits is directly related to and governed by the volume of bank loans and investments. It follows, therefore, that the volume of money in the form of demand deposits is limited by the supply of available bank reserves and the willingness and ability of the banks to make loans and investments. Although the volume of bank reserves is subject to control through the action of the central bank, the regulation of the quantity of bank credit based upon these reserves is difficult if not impossible. Indeed, it is held by advocates of 100 per cent money that bank credit is perversely elastic. In times of business expansion, borrowers flock to the banks to increase their liquid resources. As business improves, the banks become increasingly willing to make loans. There results an inflationary expansion of money leading to rising prices and economic disequilibrium. On the other hand, once business prospects decline, bank credit shrinks. Borrowers repay their loans both because they find it no longer desirable to remain in debt and because banks force repayment. This situation is accompanied by a fall in prices and depression in business. Credit liquidation may become especially acute in the case of a general loss of confidence in banks that leads to runs and compels the banks to reduce loans in order to improve their cash reserve ratio.

The criticism of fractional reserves. Advocates of 100 per cent money visualize the difficulties of monetary management as deriving from the privilege and ability of banks, operating with

⁵ Cf. Kjellstrom, Erik T. H., *Managed Money, The Experience of Sweden*, New York, Columbia University Press, 1934, Chapter VIII.

⁶ For a description of this proposal and the advantages claimed for it, see Fisher, Irving, *100 Per Cent Money*, New York, Adelphi Co. (Greenberg), 1935; Currie, Lauchlin, *Supply and Control of Money in the United States*, Cambridge, Harvard University Press, 1934, pp. 157-183; and Simons, Henry, *A Positive Program for Laissez Faire*, Chicago, University of Chicago Press, 1934, pp. 23-26.

a "fractional reserve" against demand deposits, to change the volume of their earning assets and thus to vary the volume of deposit currency based upon any given and controlled volume of reserves. The 100 per cent money plan seeks to free the economic system of the curse from such fluctuations in the volume of deposit currency by requiring that all demand deposits held by banks be backed by a full 100 per cent reserve. With such an arrangement, any variation in the volume of demand deposits is dependent upon equal variations in the volume of available cash reserves.

Proposed methods of providing banks with 100 per cent reserves. Two alternative methods are proposed whereby the volume of bank reserves behind demand deposits might be increased to 100 per cent. The first and earlier proposal would require the banks to sell government securities and other high-grade earning assets to the Federal reserve banks (or to a Monetary Authority), receiving in return additional reserve cash. If the Federal reserve banks were used for this purpose, they would be freed from any reserve requirements, so that there would be no limit to the advances that they could make to the commercial banks. This would not cause any difficulty in the operation of the reserve banks, for the plan contemplates the abandonment of gold in the interests of monetary management. This proposed method of providing the necessary additional reserves to commercial banks has been severely criticized on the grounds that it would deprive the banks of their best assets, leaving the less liquid and poorer assets to support time deposits.⁷

The alternative method would involve the making of perpetual, non-interest-bearing loans of cash reserves by the reserve banks to the commercial banks, such loans to be protected by a lien upon the assets of the borrowing bank. This second method not only answers the criticism just mentioned but also enables the banks to retain their earning assets behind demand deposits. These earning assets assist in meeting the expenses of the banks in handling checking account services. In contrast, the first method contemplates the meeting of all the operating expenses of the checking account or demand deposit department of the banks by service charges.

Under all versions of the 100 per cent money plan, additions to the cash reserves of the banking system would thereafter de-

⁷Cf. Angell, James W., "The 100 Per Cent Reserve Plan," *Quarterly Journal of Economics*, November, 1935.

pend upon open-market purchases of securities by the Federal reserve banks (or the Monetary Authority). Because banks could no longer create new demand deposits by making loans, as they now do under the fractional reserve system, new demand deposits would appear in the banking system only when new reserves were created. In fact, new reserves and new deposits would be created by one and the same operation. Whenever in the judgment of the Federal reserve authorities (or the Monetary Authority) it seemed desirable to reduce the volume of demand deposits, bonds would be sold by the reserve banks, and both bank reserves and demand deposits would be reduced by the same amount. Thus, it is clear that the 100 per cent money plan puts the control of the volume of deposit currency directly in the hands of the central authorities; and, since banks cannot create deposits upon the basis of small cash reserves by expanding loans and investments, they can no longer contribute to the perverse elasticity of deposit currency, as they can under the fractional reserve system.

Time deposits and loans under the 100 per cent money plan. The most commonly sponsored version of the 100 per cent plan would permit the banks to continue to operate the time deposit department with fractional reserves as they do under the present system. Because this department is not instrumental in the creation of deposit currency, there is little reason to interfere with its normal operations. Furthermore, into its hands would be entrusted the loan and investment business of the bank. The result, however, is that bank loans must now be limited to the volume of voluntary savings brought in and deposited with the time deposit department. No longer would the banker be able to lend more money than has been made available by voluntary savers, for he could not create deposit currency by the stroke of the pen, as he can under the fractional reserve system. Moreover, the banker could no longer extinguish part of the deposit currency or demand deposits of the business community by reducing the volume of his lending and investing operations. Thus, it is thought, the essential feature of bank loans could be retained while removing the objectionable feature of perverse elasticity of deposit currency.⁸

⁸ Other advantages sometimes claimed for the plan include: (1) the elimination of the need for deposit insurance, (2) the avoidance of the inequitable seigniorage profits by commercial banks on their coinage of money, and (3), to the extent that the reserve banks or the Monetary Authority takes over government securities to provide banks with 100 per cent reserves, the abolition of part of the burden of the government debt.

Criticisms of 100 per cent money. The main legitimate claim that can be made for the 100 per cent money plan is that it might provide a better, more effective method for control over the supply of money than can reasonably be provided under the present fractional reserve system. Its claims to support, therefore, must be based upon the extent to which it does promise superior monetary control.

One criticism of 100 per cent money stresses the danger that the whole plan may be circumvented by the use of "near money" in the form of time deposits. Clearly, if individuals were in a position to make varied use of time deposits for making money payments, the nice control over demand deposits would come to naught. To guard against such evasion, some writers have proposed that time deposits be abolished altogether. In their stead would be substituted some form of investment trusts with long-term obligations into which savers might place their funds, instead of into the conventional savings or time deposit. Such a proposal would hardly prove practicable in view of the undoubted disapproval with which it would be greeted. More frequently, therefore, advocates of 100 per cent money would rely merely upon the prohibition of the withdrawal of time deposits without notice.

A second and more serious criticism of 100 per cent money relates to the necessity of abolishing the whole short-term loan market if the plan is to be made to accomplish its purpose. The basis for this criticism may be understood if one but examines the fundamental aims of the plan and the conditions required effectively to achieve them. The primary argument for the 100 per cent plan is that it permits absolute control over the volume of "effective money" in the form of currency and demand deposits. By "effective money" is meant money that is in the public's hands and available for use as immediate purchasing power. If we assume that time deposit departments of the banks (or their equivalents) are to be permitted to continue, the adoption of the 100 per cent plan would probably be followed by some expansion in the volume of time deposits, since there would no longer exist any reason for carrying excessive demand deposit balances to curry favor with the banker. Therefore, to the normal long-run voluntary savings on which time deposits are gradually built there might be added sizable though variable amounts of seasonal excess funds of business concerns. If short-term lending by the time departments were permitted, as most versions of the plan provide, the advent of a business depression would be marked

by a decline in the volume of bank loans for reasons that are almost identical with the reasons that cause a decline in bank loans during depression under the present fractional reserve system. These reasons are: (1) the voluntary repayment of loans by borrowers who find a continuation of their indebtedness no longer worth while in the light of current business conditions, and (2) the forced repayment of loans imposed upon borrowers by the banks. The reasons for the forced liquidation of loans imposed upon borrowers by the banks are (1) fear of borrower insolvency and (2) fear of inadequate liquidity because of threatened runs by depositors or because of threatened loss of deposits due to general depression in the territory served by the bank.

The reduction of loans by the time deposit department of the banks, whether voluntary on the part of the borrowers or forced by the banks, results in the impounding of checking or demand deposits in the form of excess unused cash reserves within the time deposit or lending departments of the banking system. These excess idle reserves exactly equal the amount of loan reduction. Such an impounding and immobilizing of demand deposits will be exactly equal to the loss of demand deposits that would have resulted from credit shrinkage under the present fractional reserve system. It is this shrinkage that the advocates of the 100 per cent money system are so anxious to avoid. There is little reason for adopting such a plan merely to introduce control over credit expansion, for an appropriate increase in the powers of the Board of Governors of the Federal Reserve System to vary member bank reserve requirements would make it possible for the reserve banks to exercise sufficient control to prevent undesirable credit expansion under the present system. Clearly, the foundation for most of the enthusiasm for 100 per cent money rests upon the hope that it will afford an effective means for avoiding monetary *shrinkage* during depressions. But, as we have seen, the 100 per cent money plan, retaining short-term loan facilities, offers no assurance against credit liquidation when business becomes depressed.

Credit liquidation during depressions could be avoided under the 100 per cent plan only if the short-term loan market were abolished, for only in this way could voluntary and forced loan liquidation be avoided. It would be insufficient, however, to prohibit short-term lending to the banks alone. If banks only were denied the privilege of short-term lending, evasions would surely multiply in the form of expanded short-term loans by finance companies and trade creditors. Here, again, cash funds would be

immobilized during depressions by loan reductions for many of the same reasons that apply to bank loans.

In evaluating the 100 per cent money proposal, therefore, the expected gains in the avoidance of credit liquidation during depressions must be weighed against the economic disadvantages of depriving business of short-term borrowing facilities. The gains are not even so great as might appear at first glance. With a strict prohibition of all short-term lending, borrowers who otherwise would have reduced their loans voluntarily would under the 100 per cent system simply hoard idle cash in time of depression. A reduction in velocity would in this case be substituted for a reduction in the volume of money. There remains, then, only the possibility that 100 per cent money may avoid *forced* liquidation of credit at the price of the loss of the short-term loan market. On the other hand, panics that cause bankers, under the present banking system, to liquidate their loans and investments are not inevitable. Deposit insurance helps greatly to prevent depositor panic. Branch banking, improved stockholders' equity, and more intelligent management would go far to avoid the important causes of banks' need for excessive liquidity during depressions.

Government Investment as an Instrument of Control

The particular weakness of the control devices available for stabilization efforts lies in the difficulty of combating acute business depression. The root of economic fluctuations appears to lie in variations in the rate of investment. Most of the proposed methods of control aim to reduce these variations by appropriate changes in the rate of interest. But such adjustments are often insufficient to promote recovery when the depression is severe, for at such times the prospective marginal productivity of capital may be zero or even negative. Because of this, it is generally agreed that monetary management alone can hardly be effective without some form of direct control over the volume of investment. This conclusion is the basis for the belief that public works are a necessary supplement to successful monetary policy in times of acute depression.

The requirements for effective use of public works. To be genuinely effective in expanding investment during depression, public works require (a) proper timing, (b) proper financing, and (c) widespread approval in the business and investing community. The need for proper timing is obvious. Plans must be ready for rapid use if falling private investment is to be offset.

At the same time, public works should be gradually terminated with the recovery of private investment. Such a program calls for long-range planning, as short-run improvisation is strewn with pitfalls.⁹

The proper financing of public works requires measures that will be certain to provide a net increase in investment. But unless one visualizes a continually rising national debt, ultimate payment by the taxpayers cannot be avoided, and the proper timing of such taxes becomes an important question. The most promising procedure is to finance part of the expenditure for public works by expanding the government debt in the form of Treasury bills and notes. This policy encourages the banks to use their excess reserves as a basis for loan and deposit expansion. Government borrowing thus tends to replace private borrowing at the banks. In addition, the issue of government bonds will induce some investment by capitalists and institutional investors who otherwise would tend to hoard their cash accumulations because of investment uncertainties. As a partial alternative to the sale of bonds, the government might impose heavier taxes upon large incomes from which arise heavy accumulations of idle savings during depressions. This, however, might have undesirable psychological results. The expansion of the government debt during depressions calls for its retirement during better times. Here, again, the timing problem may be a difficult one.

Of quite a different sort is the problem that would attend the use of public works or government investment as a means of counteracting chronic depression. Some economists believe that the approach of "economic maturity" of the capitalistic system inevitably leads to a condition of chronic depression owing to the continued lag in private investment. This view suggests that a return to anything like continued prosperity will require a constant expansion of government investment to fill the gap left by the decline of private investment and the continued high propensity to save.

Finally, the success of public works in promoting recovery depends largely upon the approval of the business community. If businessmen believe that public works will be beneficial to business, they will respond favorably, and in turn will expand their own investments. On the other hand, private investment will

⁹ Cf. Gayer, Arthur P., *Monetary Policy and Economic Stabilization*, New York, The Macmillan Co., 1935, pp. 217-219.

not be stimulated if businessmen generally look upon public works as the height of folly. Indeed, under such circumstances, private investment may well fall below the level that would have been maintained in the absence of public works.

Composite Commodity Units as the Basis for Paper Currency

The idea that paper money might well be based upon commodities other than gold is by no means a new one. During depressions, businessmen frequently feel an acute need for funds that are not for the time being readily available through the normal credit channels. At such times, the idea of coining commodities into money has a special appeal. Proposals to create money upon the basis of stored commodities, however, have generally been looked upon as inflationary and contrary to the best interests of monetary stability.¹⁰ But an interesting proposal to use commodities as a basis of currency issues has been advanced that is designed to provide and to insure stability of commodity prices.¹¹

A stable money based on commodities. A dollar that will have a constant purchasing power over commodities is the goal of all stable money plans. What could be more reasonable, therefore, than to insure this constancy by providing that dollars be made interchangeable with a given volume of commodities? To do this would require the establishment of composite units comprised of staple, storable, primary commodities in their proper proportions. The dollar value of such units would be fixed in accordance with the total value of the commodities included in them, at prices of the date chosen for beginning stabilization efforts. At any time, holders of dollars could convert them at this fixed rate into units of commodities. Likewise, any holders of a unit of commodities might present warehouse receipts for the same to the monetary authority and receive paper dollars in return. Such a system is believed to assure that the price level of the units of commodities used as the standard would always remain stable. If, for example, the prices of commodities making up the commodity unit tend to fall, such commodities, in the

¹⁰ For a discussion of commodity money proposals of the depression years of the early 1920's, see Foster, Wm. T., and Catchings, Waddill, *Money*, Boston, Houghton Mifflin Co., 1924, Chapter VII.

¹¹ Cf. Graham, Frank D., "The Primary Functions of Money and Their Consummation in Monetary Policy," *American Economic Review*, Supplement, March, 1940, and Graham, Benjamin, *Storage and Stability*, New York, McGraw-Hill Book Co., 1937.

proper proportions, will be put into storage and the warehouse receipts will be converted into money. On the other hand, whenever the market prices of the commodities tend to rise, these receipts will be redeemed by presenting dollars, and will be sold at the market price. Such a system would automatically lead to an expansion of currency when prices begin to fall and a decrease in the currency whenever prices start to rise.

Professor Graham believes that such a system of money would provide an automatic method of satisfying the varying degrees of liquidity preferences of the public. Whenever the demand for cash balances instead of goods increases, the public can quickly and easily satisfy its desires by converting goods into money through the money authority. Whenever liquidity preference diminishes again, the process can be reversed.

Objections to the plan. In order for such a plan to be effective in controlling general prices, it would be necessary to include in the composite commodity unit a representative sample of all of the important goods that enter the markets. This means that a sample list of staples would be insufficient, for there is no reason to expect the general price level to follow the price of such staples. If, for example, a recovery period found prices of raw-material staples rising sharply, this system would reduce the quantity of money irrespective of the behavior of general prices. But as the number of such commodities that are included in the unit is increased, the difficulties of administration become enormously magnified. The problem presented by storage, for instance, is a serious one, while the familiar difficulty of proper proportions or weights of the different commodities in the representative unit also presents itself.

Moreover, there is no reason to think that this scheme would solve the liquidity-preference problem satisfactorily. The individuals who become afflicted with an annoying attack of liquidity preference during depressions are by no means confined to merchants and dealers in merchandise. Equally if not more troublesome is the liquidity preference of investors in securities and of business firms that would normally be purchasing new equipment, machines, tools, buildings, and so forth. None of these individuals would be in a position to satisfy their liquidity preferences by the pledge of staples, so as to keep up the price of the things that they ought to buy but will not.

On the whole, therefore, it seems highly questionable if this plan would prove as effective a method of controlling the monetary supply and assuring the business community that there will

be the right volume of money as do some of the more conventional and better understood methods. In the formation of monetary policy, the acute problem centers not so much in methods of control as in the development of proper criteria for action.

CHAPTER XLIX

STANDARDS OF MONETARY AND CREDIT POLICY: QUALITATIVE STANDARDS

CREDIT policy, which is the essential part of most programs of monetary control, may be divided into two primary classes. The first emphasizes the importance of the *quality* of bank credit. The second emphasizes the importance of *quantity*. Up to about 1935, the credit policies of the Federal Reserve System were essentially qualitative in character. Since that time, a shift in the direction of quantitative standards is discernible.

The Qualitative Standard of Credit Policy

The conflict between the qualitative and quantitative standards of credit policy is not a new one. An early, clear-cut example of the difference between these views occurred in connection with the celebrated Bullion Report of 1810.

The Bullion Report. Because of temporary difficulties, the Bank of England was permitted to suspend the redemption of its notes in specie under the authority of the Restriction Act of 1797. The government was at that time waging a great war, and found freedom from monetary restrictions to its liking, and for this reason allowed the Restriction Act to remain in force. At first no noticeable depreciation of the pound developed, but by 1808-1809 depreciation had become serious enough to attract public attention. The result was the appointment of a committee by the House of Commons on February 19, 1810, to investigate the reasons why the pound had depreciated in terms of gold and foreign currencies. The report of this Committee was ordered printed on June 8, 1810.¹

The Committee had occasion, in the course of its investigation, to inquire of the managers of the Bank of England as to whether

¹ See Cannan, Edwin, *The Paper Pound of 1797-1821*, London, P. S. King & Son, 1925, pp. vii-xxii.

or not the depreciation of the gold and foreign exchange value of the pound might be due to excessive issues of inconvertible notes. In reply, the Bank of England managers insisted that the decline in the value of the pound must have been due to a rise in the value of gold because of its scarcity on the Continent of Europe. It was impossible, in their view, that the value of the pound should decline because of the issue of notes by the Bank, for it issued such notes only against "legitimate mercantile paper." It was held unnecessary that the behavior of foreign exchange rates or the price of gold bullion be consulted to determine the correctness of the volume of note issue.² The only requirement for a sound currency was that the Bank lend on self-liquidating commercial paper, to use a phrase made familiar by the rules governing the rediscount of eligible paper by the Federal reserve banks.

The Committee rejected this view expressed by the managers of the Bank of England, and branded as fallacious the idea that no excessive supply of currency could result from the discount of perfectly good bills. To quote: ³

The fallacy, upon which it is founded, lies in not distinguishing between an advance of capital to merchants, and an additional supply of currency to the general mass of circulating medium. If the advance of capital only is considered, as made to those who are ready to employ it in judicious and productive undertakings, it is evident there need be no other limit to the total amount of advances than what the means of the lender, and his prudence in the selection of borrowers may impose. But in the present situation of the Bank, intrusted as it is with the function of supplying the public with that paper currency which forms the basis of our circulation, and at the same time not subjected to the liability of converting the paper into specie, every advance which it makes of capital to the merchants in the shape of discount, becomes an addition also to the mass of circulating medium. In the first instance, when the advance is made by notes paid in discount of a bill, it is undoubtedly so much capital, so much power of making purchases, placed in the hands of the merchant who receives the notes; and if those hands are safe, the operation is so far, and in this its first step, useful and productive to the public. But as soon as the portion of circulating medium, in which the advance was thus made, performs in the hands of him to whom it was advanced this its first operation as capital, as soon as the notes are exchanged by him for some other article which is capital, they fall into the channel of circulation as so much circulating medium, and form an addition to the mass of currency. The necessary effect of every such addition to the mass, is to diminish the relative value of any given portion of that mass in exchange for commodities.

The Committee therefore rejected the notion that the depreciation of the pound could not have been caused by an excess note

² *Ibid.*, pp. 46-50.

³ *Ibid.*, p. 50.

issue by the Bank of England. It recommended that resumption of specie redemption of notes be undertaken as a means of restoring the pound to its old position. In spite of the Committee's recommendations, resumption was delayed until 1821. The rejection of the purely qualitative standard by the Committee was accompanied by a demand for a limited form of quantitative control through specie redemption. Such a quantitative standard is, of course, necessary if an international specie standard is to be maintained.

The self-liquidating commercial loan or "banking theory" of credit policy. The theory of bank credit that developed in England after the resumption of specie payments in 1821 was based upon an acceptance of the basic rule laid down in the Bullion Report. The redemption of currency in specie, plus the extension of sound commercial credit to business, came to be accepted as the proper test of credit policy. This was known as the "banking principle."⁴ Actually, this was not widely different from the theory held by the managers of the Bank of England. To the rule that credit should be issued only to sound businessmen for current purposes, the Bullion Report added the limiting feature of specie redemption.

It was not long until difficulties developed in the application of the banking principle. The occurrence of a boom in 1824-1825 and the crisis of 1826 indicated clearly that the maintenance of convertibility was insufficient to guarantee a properly regulated currency. Experiences such as this led to the development of an opposing school of thought which advocated the "currency principle."

The "currency school." Opposed to the banking principle were the members of the "currency school," who held that the limits upon currency and credit set by sound commercial loans and the conversion of currency into specie were inadequate. The banking principle was believed to lend itself to improper excesses and shortages of the currency, all of which accentuated the tendency toward booms and depressions.⁵

⁴ Ricardo lent his influence to this view. See Ricardo's *Economic Essays*, Goner ed., London, G. Bell & Sons, 1926, pp. 8-10. Writers who held that the premium on bullion, the depreciation of the exchange value of the pound, and high commodity prices were symptoms of an excessive currency issue were known as "bullionists." For a thorough survey of the economic thinking that came out of the bullionist controversies of the period, see Viner's *Studies in the Theory of International Trade*, New York, Harper & Bros., 1937, Chapters III and IV. Also see T. E. Gregory's Introduction to Took and Newmarch, *A History of Prices*, London, P. S. King & Son, republished 1928, Vol. I.

⁵ Viner, *op. cit.*, pp. 220-221.

The currency school held that a mixed currency, consisting of convertible paper notes and specie, would behave correctly only if the total volume fluctuated in absolute amounts with the import and export of specie. This principle required that the issue of paper money be made to fluctuate with changes in the quantity of specie held by the issuing banks. The Bank Act of 1844 (Peel's Act) was designed to put into operation the principles of the currency school. Except for a small uncovered issue based upon government securities, Bank of England notes were to be issued only against gold. Thus changes in the volume of notes were limited to changes in the volume of gold held by the issue department.

The experience with the application of the currency principle was disappointing. As the banking school pointed out, bank deposits also made up an important part of the currency in use. Although the currency principle insured the ability of the Bank to redeem its notes in specie, it did not protect the Bank from difficulties arising from a withdrawal of deposits, and was no substitute for careful management of the whole credit operations of the Bank. It was necessary to suspend the Bank Act three times within 25 years in order to provide sufficient currency to meet panic conditions.⁶

Modern application of the "banking theory." The "banking theory" is essentially a qualitative standard, since it holds to the view that, when limited by the test of convertibility, the creation of bank credit (both notes and deposits) cannot fail to be correct if based upon loans made for strictly short-term and legitimate business purposes. Quite naturally, it was embraced by the anti-quantity theorists in their attacks upon the quantity theory. It will be recalled that one argument made in opposition to the quantity theory denies that bank credit, soundly created, can have any direct influence upon the price level. The reason given for this belief is that short-term commercial loans give rise to bank credit required by the change in business activity. If soundly made, therefore, self-liquidating commercial loans cannot result in price inflation, because their expansion is accompanied by an additional production of goods. When business is active and goods pass readily into consumers' hands and are paid for, there is no limit to the amount of credit that can be safely granted, except that set by the offerings of goods.⁷

⁶ *Ibid.*, pp. 229-234.

⁷ Willis, H. Parker, *The Theory and Practice of Central Banking*, New York, Harper & Bros., 1936, p. 303.

One of the clearest examples of an attempt to apply the banking theory to credit control can be found in the credit policies of the Federal Reserve System. Originally it was thought that strict limitation upon the privilege of rediscounting, so that only self-liquidating paper might be purchased by the reserve banks, would automatically insure the proper use of Federal reserve credit. Practical experience, however, soon led to a partial abandonment of this policy. The reserve banks began to buy government securities in the open market as a means of supplementing their scanty income from rediscounting. Later, after the entrance of the United States into the war in 1917, expediency led to the practice of lending freely to member banks on the security of government bonds and "war paper."⁸ The experiences of the war and early postwar years clearly indicated a need for some standard that would harmonize with the practices that had developed under the pressure of war necessity. This new statement of credit policy was made in 1923. It set forth that the test of the proper quantity of bank credit should be the accommodation of commerce and industry. Credit should be freely granted so long as it was put to productive use. The criteria for determining whether or not bank credit was being put to productive use were:

1. Are goods moving smoothly from producers to consumers without speculative accumulations of inventories?
2. Is the volume of trade, production, and employment in equilibrium with the volume of consumption?

The weakness of the banking principle of credit control. A weakness in the application of the banking theory arises from the difficulty, if not the impossibility, of any individual banker's being able to draw the line on bank loans before they become inflationary.⁹ The banker should not be criticized for this. His is essentially a worm's eye view of the economic structure, and particularly is this true under the unit banking system. When business shows brisk improvement, borrowers' needs for "legitimate" loans expand. At the same time, loans appear to be more sound than ever, for improved profit prospects and rising prices constantly make for greater security for the lender. It is little

⁸ "War paper" consisted of customers' notes given to banks to obtain funds with which to purchase government bonds.

⁹ For a clear exposition of how bank credit created on the basis of commercial loans may easily become inflationary, see D. H. Robertson's *Money*, New York, Harcourt, Brace & Co., 1929, Chapter IV.

wonder, therefore, that the banker sees a constantly expanding opportunity for the making of "sound commercial loans." Not until the evidence of disequilibrium becomes more obvious will the soundness of commercial loans be questioned. In the meantime, serious inflationary forces are unleashed. The situation is in no way remedied by the free rediscounting of self-liquidating commercial paper by the central bank.¹⁰

The possibility of successful avoidance of inflationary credit expansion is somewhat better where the central bank undertakes to determine whether or not credit is being put to proper productive and non-speculative uses, for the central bank has the very material advantage of being able to view the credit situation as a whole. Yet here, too, a serious limitation arises in the difficulty of devising adequate standards for measuring the legitimate credit needs of the business community. Essentially it is the problem of avoiding financing an expansion in business activity and investment that cannot be maintained, that is, an inflationary movement. In 1923 the Federal Reserve Board believed that it had the proper formula for detecting unsound and inflationary uses of bank credit. Unfortunately this formula was based largely upon the experience of the postwar boom that terminated in 1920. This inflation, accompanied by sharply rising commodity prices, was characterized by speculative accumulations of inventories. This explains the preoccupation of the Board in 1923 with the question of whether or not goods were moving uninterruptedly from producer to consumer. The unfortunate result was that the Board was blinded to the inflationary and disturbing developments of 1923-1929, when, in the face of fairly stable prices, falling industrial costs led to high business profits and an excessive rate of capital expansion based upon expanding bank credit.

It is evident that attempts to formulate adequate standards of credit policy based upon qualitative considerations are beset with difficulties of great magnitude. This explains the interest in quantitative standards displayed by most present-day students of monetary problems.

¹⁰ Cf. Currie, Lauchlin, *The Supply and Control of Money in the United States*, Cambridge, Harvard University Press, 1934, Chapter IV; and Williams, J. H., "Monetary Stability and the Gold Standard," in *Gold and Monetary Stabilization*, Chicago, University of Chicago Press, 1932.

CHAPTER L

QUANTITATIVE STANDARDS OF CREDIT POLICY

QUANTITATIVE standards for monetary and credit control are now generally accepted by advocates of monetary management. They have the advantage of a certain definiteness lacking in qualitative standards and, in addition, have the full authority of the quantity theory of money behind them. The basic assumptions that underlie all proposed quantitative standards are:

1. Control over the volume of money and bank credit can be achieved by existing or proposed devices.
2. The general level of prices can be brought under control by appropriate variations in the quantity of money and credit.
3. The elimination of cyclical fluctuations in business activity is a desirable social program.
4. The introduction of control over the price level will reduce the magnitude and violence of cyclical fluctuations by eliminating monetary factors that contribute to windfall gains and losses.

The validity of the first three assumptions need not occupy us here. Both the relation of the quantity of money to prices and the available instruments of monetary and credit control have already been examined. The desirability of a reduction in the intensity of business fluctuations is generally admitted. The last assumption, that monetary control over the level of prices can be made to contribute to business stability, remains for consideration. To what extent and in what manner can control of the price level be used in the interest of economic stabilization?

The Choice of Price Levels

The first step in introducing monetary control over the price level is to decide the important question of what index of prices

should be used as a criterion. It is well known that a substantial cyclical and secular divergence occurs among the several index numbers of prices. The index of wholesale prices responds more quickly to cyclical changes than do retail and cost of living index numbers. In turn, the price movements of certain "sensitive" commodities are much more rapid and violent than the price movements of wholesale commodities in general. Finally, an index of general prices, such as that constructed by Snyder, is the least responsive of all.

The choice of an index number to be used as a basis of stabilization efforts will depend largely upon what is considered the most urgent reason for attempting control. Thus, if the advocate of monetary stabilization is primarily concerned with the protection of the real wages of the consumer against price inflation, the cost of living index would seem to be the most desirable. On the other hand, if cyclical fluctuations are to be measured and guarded against, a price index sensitive to such changes is needed.

The cost of living index. The advantage that can be claimed for using the cost of living index as a basis for stabilizing operations arises solely from the fact that a stable cost of living would insure the consumer against losses of real wages due to the lag of money wages behind price changes. Laudable as this motive undoubtedly is, it is overshadowed by the difficulties that would attend its use. First, to assemble an accurate and representative cost of living index for the average consumer presents a difficult statistical task. Second, stabilization of incomes and business activity is a much more significant goal of credit policy than stabilization of the cost of living. Cost of living indexes are too insensitive to short-run changes to be of much aid in anticipating cyclical movements. In contrast, wholesale prices do respond readily to cyclical changes. In any event, stabilization of wholesale prices would provide sufficient stability to retail prices to meet all practical requirements.

The general price index. At first glance, one might conclude that a general index of prices, which reflects the changes in the purchasing power of money over everything that enters the market in exchange for money, ought to be a proper basis for credit policy. Such an index would include wholesale prices, wages, the cost of living, rents, transportation costs, real estate values, security prices, farm prices at the farm, and equipment and machinery prices, and would give a cross-section view of the final results of the total monetary transactions. But a comprehensive index of this sort is of slight value as an indicator

of short-run business developments.¹ The multiplicity of items largely conceals the actual movements of sensitive prices that are the significant indicators of cyclical change. Changes in the prices of securities and real estate, for example, are of little direct importance to the problem of cyclical stability. Rather, the basic problem of cyclical fluctuations deals with the changes of prices and costs of reproducible goods.

The wholesale price index. The wholesale price index as a criterion for stabilization operations has a number of distinct advantages:

1. It reflects promptly and clearly cyclical fluctuations in business activity.
2. It may be calculated quickly and on a sufficiently broad basis. This is essential to monetary control.
3. It reflects the movement of prices of internationally traded commodities. International co-operation for the purpose of stabilizing the world price level would require the use of indexes heavily weighted with international goods.

Wholesale prices, to be sure, do not furnish an infallible guide to either domestic or international stabilization. Stable wholesale prices are likely to be inflationary in a progressive economic society. As a guide to international efforts at stabilization, a wholesale price index such as that the Bureau of Labor Statistics suffers from the weakness of including commodities that are purely domestic, while those commodities which do move in international trade are improperly weighted to provide a proper measure of the international price situation. Nevertheless, the wholesale price index more nearly covers the total range of commodities that are important in the profit calculations of businessmen than does any other index of prices yet available. For this reason, proposals for monetary stabilization commonly provide for the use of the index of wholesale prices as the basis or criterion for monetary control.²

Stable Wholesale Prices as the Goal of Credit Policy

The case for stable prices is a fairly clear one. In a world of rigid costs, it is important that fluctuations in the price level be

¹For a description of Snyder's revised index of general prices, see his "The Measure of the General Price Level," *Review of Economic Statistics*, February, 1928.

²Cf. Gayer, Arthur D., *Monetary Policy and Economic Stabilization*, New York, The Macmillan Co., 1935, Chapter XII; Hawtrey, R. G., *The Art of Central Banking*, New York, Longmans, Green & Co., 1932, Chapter V.

avoided if stable business is to be achieved. For, if prices rise, windfall profits encourage a rate of expansion of capital investment that cannot be maintained and that leads to an inevitable reaction. Falling prices, on the other hand, lead to losses, a falling off in economic activity, and unemployment. Thus, in a search for the basis of economic stability, a stable price level seems to hold the most promise. Moreover, from the standpoint of debtors and creditors, stable prices seem to offer substantial justice.

Some objections to stable wholesale prices. Primarily, the objection to stable wholesale prices rests upon the important fact that modern economic society is dynamic in nature. In the past, rapid technical progress has resulted in a constant decline in the real costs of production. Since it is to be expected that technical progress is by no means ended, it must be taken into account in proposals for economic stabilization. But stable prices in the face of declining costs present difficulties. First, so far as debtors and creditors are concerned, stable prices would permit the debtors to appropriate the benefits of economic improvements at the expense of the creditors. To be sure, this may be of slight importance in view of the fact that creditors comprise the inactive side of the lending transaction. One may hold that the benefits of improvements should go to the debtors, since, being businessmen, they are more responsible for the introduction of the new techniques than are the creditors. A similar argument, based upon the equities of the situation, criticizes stable prices in the face of falling costs as tending to deprive wage earners of complete participation in the gains because of the lag in money wages.

TABLE 78

INDEXES OF PRICES, BUSINESS PROFITS, LABOR COSTS, AND OUTPUT OF CAPITAL
EQUIPMENT IN THE UNITED STATES, 1922-1929*
(1923-25 = 100)

	Wholesale Prices	Profits of 10% Corporations	Payrolls ÷ Production	Output of Capital Equipment
1922.....	96.0	81	95.4	81
1923.....	99.9	90	101.7	102
1924.....	97.4	109	101.4	91
1925.....	102.7	101	97.1	107
1926.....	99.3	128	96.7	120
1927.....	94.7	152	96.1	116
1928.....	96.0	186	91.9	118
1929.....	94.6	232	90.7	138

* Barger, Harold, "The Banks and the Stock Market," *Journal of Political Economy*, December, 1935, p. 772. Quoted by permission of the University of Chicago Press.

The inflationary effects of stable prices. Of still more significance, however, is the inflationary effect of stable prices in a period of rapidly falling costs. Money costs decline while efficiency is growing because of the well-recognized failure of the money rate of wages and interest to rise in proportion to the growth of efficiency. Stable prices in a period of falling money costs, therefore, tend to lead to excessive profits, which in turn lead to overexpansion and subsequent depression. The overexpansion and collapse that occurred in the United States during the 1920's is commonly explained upon these grounds. Table 78, on page 783, presents some evidence in support of this view.

Stable prices and equality of savings and investment. Advocates of a stable price level sometimes hold that it would automatically avoid both forced saving and a wastage of voluntary saving by permitting and requiring that voluntary money savings equal investment. The banking system would merely operate to convert voluntary savings into real capital. But in an expanding economic society, this would not be true. The growth of production, because of both a larger population and greater efficiency, requires some expansion of the means of payment if stable prices are to be maintained.

The expansion in the volume of money sufficient to provide stable prices in a growing and improving economy would require a rate of interest low enough to induce the rate of investment to rise somewhat above the rate of saving. This is necessary because an expansion of money under the conventional banking system occurs only when business finds it profitable to expand capital by borrowing at the banks.³ But this low interest rate may easily lead to an upswing of business that eventually must be reversed. The failure of money costs of production to rise with the growth in efficiency provides an impetus to inflation already described.⁴

Slowly rising prices. Impressed by the obvious fact that rising prices give encouragement to business, some have advocated a policy of gently rising prices as a cure for unemployment and depression. The windfall profits that would be relied upon to

³ Either business must expand direct borrowing at the banks or the banks must expand their security holdings.

⁴ Cf. Durbin, E. F. M., *The Problem of Credit Policy*, New York, John Wiley & Sons, 1935, pp. 112-120. Durbin suggests that a stable price policy might be shorn of its inflationary tendencies if the required monetary expansion were brought about by placing the appropriate new money directly into the consumers' hands and at the same time forbidding commercial banks to expand loans and deposits. *Ibid.*, pp. 128-135.

provide the stimulus to business activity depend, of course, upon the tendency of wages and other costs to lag behind the rising prices. Yet this need not be objectionable to the wage earner, for he would gain in fuller employment more than he would lose by a lagging wage rate. Such a policy could hardly be expected to provide the economic millennium, however, for it would almost certainly be accompanied by an overexpansion in investment and inflation that inevitably are followed by a collapse. Far from providing protection from business fluctuations and unemployment, a rising price policy would be certain to make matters worse.

Slowly falling prices. Because money costs of production are "sticky" and can be forced down only through depression, falling prices are quite generally viewed as the arch-enemy of economic stability and well-being. Nevertheless, some reasons can be given in favor of falling prices.

First, in contrast to rising prices, which reward the speculative businessman and shield the inefficient from the fruits of his errors, falling prices require high-grade managerial performance for business survival. From the standpoint of public welfare, this is a desirable result. Second, if prices do not fall so rapidly as to unduly depress business activity, the distribution of income is improved because of the increased share that tends to go to wage earners.⁵ Third, slowly falling prices provide an escape from the inflationary effect of stable prices in an advancing economic society.

Neutral Money

To some writers, the ideal money is one that in no way introduces any monetary influences into the economic situation. In other words, money should exercise neither an inflationary nor a deflationary influence on business activity. Such a money would be "neutral." The achievement of this ideal would eliminate one important cause of business fluctuations and bring the goal of economic stability that much nearer to attainment. This does not mean that a neutral money would entirely eliminate business fluctuations, for nonmonetary factors would remain.⁶

⁵ Cf. Marshall, Alfred, *Official Papers*, London, Macmillan and Company, Ltd., 1926, p. 9.

⁶ For an examination of the question of whether or not neutral money would entirely eliminate cyclical fluctuations, see Harold Barger's "Neutral Money and the Trade Cycle," *Economica*, November, 1935, pp. 436-440.

The requirements for a neutral money. What monetary system would satisfy the requirements of a neutral money? Advocates of stable prices generally regard their monetary policy as a correct one. They hold that stable prices will prevent monetary forces from operating to cause business fluctuations. But to the advocates of neutral money, this belief is erroneous and, when accepted dogmatically, lies "at the root of most of the shortcomings of present-day monetary theory" and is a bar to almost all further progress.⁷ Because economic fluctuations involve inequality of saving and investment, the true test of a neutral money is sometimes believed to be one under which saving and investment are equal. To equalize saving and investment requires the maintenance of the rate of interest at its natural or equilibrium point. Banks must lend neither more nor less than is deposited with them as savings and must not change the volume of currency and demand deposits. To permit banks to expand the volume of money would require an excess of investment over saving, with a resultant disturbance to equilibrium.⁸

But the idea that neutral money requires a fixed volume of money must not be taken too literally. There are circumstances that call for a change in the volume of money if the neutral money goal is to be achieved. For example, if the volume of money were fixed, a change in the structure of industry that reduced the money required in the industrial circulation would tend to be inflationary. On the other hand, a change that increased the money needed for industrial circulation would be deflationary, since money available for consumers' income would have to be reduced to provide the required increase in industrial cash balances.⁹ Therefore, any economic change that causes a change in the circuit velocity of money requires offsetting changes in the volume of money if it is to remain neutral. Improvements in industrial technique leading to greater productive efficiency tend to require an elaboration and lengthening of the productive process. To the extent that this increases the demand for money to handle the expanded industrial process, neutral money ought to expand also. Otherwise, the proportion of the total money supply that will flow into consumers' hands will be reduced and

⁷ Hayek, F. A., *Prices and Production*, London, G. Routledge and Sons, Ltd., 1931, p. 25.

⁸ *Ibid.*, pp. 89-92.

⁹ On this point, see Hayek, *op. cit.*, pp. 101-106, and Durbin, *op. cit.*, pp. 120-128.

prices will have to fall *faster* than justified by the fall in costs.¹⁰

Neutral money and a growing population. Still another troublesome question concerns the changes in output arising from the growth of population. Clearly, if the growth of population results in an expansion in total output, a fixed quantity of money would cause a deflationary and entirely unwarranted fall in the level of prices, one in no way related to a fall in real costs. The cash requirements for industrial circulation will be increased as the whole scale of output grows. At the same time, the number of persons requiring income cash balances will increase. A fixed supply of money under these circumstances must result in a fall in prices sufficient to enable the fixed quantity to care for the increased requirements.¹¹

Finally, the concept of neutral money necessarily involves the total amount of money payments made during a period of time, (that is, MV). The actual volume of money must, therefore, be adjusted to offset changes in velocity arising from hoarding and dishoarding of cash balances.

One may conclude that the ideal of neutral money is most nearly fulfilled by a monetary system in which the quantity of money is allowed to vary only to offset (1) changes in circuit velocity due to changes in the productive processes, (2) changes in the volume of production arising from a growth of population, and (3) changes in the velocity of money due to hoarding and dishoarding. Under such an arrangement, the result would be to stabilize per capita money incomes. This appears to be a more desirable theoretical goal than either a fixed supply of money or stable prices.¹²

Neutral money policy not suitable for a country on an international currency system. Professor Hayek, one of the leading advocates of neutral money, holds that it is not suitable for application to a single country but, instead, is appropriate only for the closed economy of the whole world. He holds that it is desirable that the volume of money within any particular geographical area should fluctuate with changes in production within

¹⁰ Cf. Barger, *op. cit.*, pp. 433-434, and Gayer, *op. cit.*, pp. 241-243.

¹¹ Durbin suggests that if the growth of population is combined with a constant supply of capital, the resulting reduction in capital per head will tend to reduce the number of stages through which output must pass during the production process. Thus, taken alone, a growth in population would tend to increase the proportion of consumers' income to the total circulation. This would be a factor tending to offset somewhat the deflationary effects. Durbin, *op. cit.*, pp. 153-159.

¹² Cf. Durbin, *op. cit.*, pp. 120-129.

that area. Only in this way can each community's share in the products of the rest of the world be properly adjusted. This would not require an absolute increase in the money supply of the whole closed economy of the world, but merely a variation in the "relative local distribution" of money between the different areas.¹⁸ This particular criticism of neutral money does not impress most advocates of monetary management, who prefer an independent rather than an international currency system. With an independent currency system, changes in the quantity of money within any particular country are not required in order to bring about appropriate changes in that country's command over world goods, for the balance of payments is equalized by shifts in the foreign exchange rates.

The objection to fixed money incomes. We have already seen that neutral money in its most effective form would aim at the stabilization of money incomes. Such a system would surely meet with formidable objections in labor circles. It is difficult to persuade an individual of the advantages of receiving the benefits of industrial progress solely through the medium of lower prices. Labor, along with other recipients of money incomes, is much impressed with the importance of an expanding money income. It is not hard to see why this is so. The success of any individual or group of individuals in improving their relative position in the economic system normally requires some increase in money income. A monetary system that lessens the opportunity to strive for a higher money income is, therefore, certain to be viewed with suspicion if not with outright disfavor. A neutral money system would require that trade union pressure for higher wages be stoutly resisted, for increased money wages would have to represent only increases in the proportion of the total national income that labor receives. The serious preoccupation of labor with the size of its money income furnishes a strong practical reason for a preference for stable prices, with wages rising with technical advance, rather than neutral money with its stable money income requirements. In contrast, a stable price level not only permits a general rise in wages as efficiency of production is increased, but also it avoids the painful necessity of cutting piece rates with improvements in efficiency. Further, stable prices with rising money wages avoids the need for absolute reductions in money wages of the less efficient workers.

The criteria for administering a neutral money. Another serious objection to any practical application of the neutral

¹⁸ Hayek, *Prices and Production*, pp. 93-95; 108-109.

money theory is found in the difficulty of setting up workable criteria for determining the proper quantity of money. One escape from this troublesome problem is the adoption of a fixed-quantity-of-money policy. But we have already seen that such a policy is certain to have undesirable deflationary effects. Clearly, there is no readily available measure of the rate of technical progress from which one might calculate the proper rate of decline of the price level required for a stable-income neutral money. Nor is there any easy way to determine the changes in the quantity of money that would be required to offset increases in population and changes in the monetary requirements of the industrial system arising from changes in productive technique. Even changes in velocity due to hoarding and dishoarding are difficult to measure promptly enough to furnish a guide to monetary policy.¹⁴ In these respects, the policy of stable prices, in contrast to stable incomes, has distinct advantages.

Deflationary effects of neutral money due to monopoly and unequal rates of economic improvements. Another criticism of neutral money is based upon the existence of monopolies and unequal rates of economic improvements within the industrial system. If the criterion used to regulate a neutral money system is a declining index of prices that corresponds to the average fall in costs, there is danger that some industries would be unduly depressed. The large number of products that are sold in markets that are less than purely competitive would create a problem because of the tendency of prices of such goods to respond belatedly to a decline in cost. Therefore, any attempt to drive down the *average* level of prices by an amount corresponding to the average decline in costs must result in undue pressure upon the prices of the nonmonopolized products. Only in this manner could the price index be depressed by the amount required to correspond with the growth of productive efficiency. A similar result would occur if, as is almost certain to happen, technical efficiency increased at unequal rates in different industries. Here, again, the imposition of a falling price level, corresponding to the average fall in costs, would unduly depress prices in industries that have enjoyed a less than average growth in efficiency. At the same time, industries whose efficiency is growing at a rate above the average would be somewhat inflated.

The above criticism does not apply seriously, however, to a neutral money whose quantity is permitted to increase only by

¹⁴ For an interesting attempt to set up a basic design for measuring the monetary factors involved in a neutral money, see Durbin, *op. cit.*, Chapter VI.

an amount needed to offset population and velocity changes. Because under such a criterion of neutral money the level of prices would be disregarded, no undue pressure need be felt by nonmonopolized prices or by prices of goods produced in industries having a less than average rate of growth in efficiency.

Finally, a neutral money designed to provide a constant level of money incomes possesses a serious theoretical and practical defect in an economy in which economic improvements take such a form that the real marginal productivity of capital advances somewhat faster than the real marginal utility of labor. In such a case, although labor's income would be expanding absolutely, its relative share in the total economic output would be declining. Under these circumstances, wage rates would have to be forced down in order to adhere to the constant per capita income principle. Resistance to wage rate decrease would promote a secular upward trend in unemployment.¹⁵

Constant Per Capita Money Income versus Stable Prices

The choice of monetary policy would seem to lie between neutral money, of the sort that will provide stable per capita money incomes, and stable prices. The theoretical requirements for economic stability appear to be most nearly met by neutral money. But as a practical matter, it leaves much to be desired. On the other hand, stable prices have much to be said for them from the standpoint of practical application. In making a choice in such a matter as this, theoretical perfection must sometimes be sacrificed to practical considerations.

One of the strongest reasons for preferring stable prices instead of the falling prices of neutral money is the relatively greater ease of setting up a criterion for establishing stable prices. Another powerful reason exists in the strong sentiment in favor of rising money incomes. Such sentiments cannot be airily disregarded in proposed plans for monetary management, since public opinion must be taken into account. When it comes to an actual choice of policy, the preference would seem to lie with stable prices in spite of the well-known limitations of such a policy. The practical advantages of stable prices promise to exceed those of neutral money by a considerable margin.

The avoidance of inflation under stable prices. In spite of its shortcomings, a stable price policy would be no little improvement over highly unstable prices, for any resulting reduction in

¹⁵ Durbin, *op. cit.*, pp. 159-161.

the amplitude of business fluctuations would be a substantial economic gain. The value of stable prices would be still further enhanced in case their inflationary tendencies in an advancing economic society could be avoided. What, we may ask, are the possibilities in this direction?

Because the inflationary effect of stable prices arises from the lag in the rewards of factors of production in the face of increasing productive efficiency, an obvious cure would involve an appropriate increase in such rewards. The action of trade unions might be utilized to bring about rising wages. Unionization could be encouraged. But such a method of insuring against the appearance of windfall profits would be unreliable and unsatisfactory. As an alternative, some automatic increase in wage levels might be provided for as the average efficiency increased. There seems to be no very good way to provide increased incomes for creditors and other recipients of fixed incomes. Any plan to increase wages and other money incomes involves the dual difficulties of measuring the rate of increase in efficiency and avoiding undue deflationary pressure upon business firms not enjoying an improvement in efficiency.

A more promising suggestion for avoiding overinvestment and boom under stable prices is Durbin's proposal that the expansion in the quantity of money required to provide stable prices in a growing economy be made available by the issue of currency to consumers by the government.¹⁶ But with falling money costs and stable market prices, the injection of new money into consumers' pockets will result in excessive business profits during the time taken for wages and other costs to rise. If credit expansion were then readily available through the commercial banks, an inflationary and self-reversing expansion in capital investment would be likely to develop. In order to avoid this possible cumulative inflation, the commercial banks would have to be prevented from making any further expansion in currency and credit by a careful limitation upon the reserves made available to the banking system by the central bank.

The short-period aspect of price stabilization. In entering upon any general program of price stabilization, there arises the problem of the manner in which the monetary authorities are to exercise their powers. For example, shall they maintain a somewhat loose type of control aimed at preventing the development of any dangerous cyclical price movements while allowing some

¹⁶ Durbin, *op. cit.*, pp. 232-237.

short-run flexibility in the price level, or should they strive to impose a tight form of supervision with the aim of preserving, so far as possible, an absolutely stable level of short-run prices?

Practical attempts at price stabilization must involve the use of some selected index of prices. When this index shows signs of fluctuation, the monetary authority must take proper counteracting measures. But attempts to counteract every short-time change in the price level would be certain to prove both difficult and undesirable. In the first place, because of the inaccuracy of index numbers, it would be inappropriate to put the monetary controls into operation merely because of a small movement of the price index. Not until the movement reached some significant proportions should counteracting monetary operations be introduced. Nor are the instruments of control available to the monetary authority sufficiently precise to justify attempts to correct small price movements. Any price stabilization plan, therefore, seems to call for a margin of tolerance within which movements of the selected price index might be viewed with equanimity.

Further, circumstances may easily arise that would make the rigid imposition of a stable price index a highly undesirable short-run policy. This may be illustrated by assuming that unfavorable grain weather has resulted in a short crop. The price of grain will rise, and with it the index of prices. If corrective action were to be taken to prevent or check such an increase in the price index, it would involve the deflation of other prices. Clearly, such action would be an outright injury to business stability, for it would impose a general business deflation upon the community in order that the precious stability of the price index might be preserved. Similarly, a bountiful crop would lead to lower grain prices and a fall in the price index. To introduce inflationary measures designed to raise other prices sufficiently to bring the average back up to the level agreed upon would also be highly undesirable. For this reason, it is important that price movements originating in such accidental and short-run occurrences be disregarded by a monetary authority bent upon price stabilization.¹⁷

Because of the need for a margin of tolerance in connection with price stabilization, it becomes all the more necessary that

¹⁷ Cf. Mahr, Alexander, *Monetary Stability*, Chicago, University of Chicago Press, 1933 (Public Policy Pamphlet No. 9), pp. 9-12. Also see Gayer, *op. cit.*, pp. 243-245.

some effective means be available to the monetary authority by which it may judge the nature of economic developments. It must be in a position to judge, for example, whether or not a particular movement in the price index is due to an underlying inflationary or deflationary development. Promptness of action is essential, but it must be based upon sound knowledge. If neither a strictly fixed supply of money nor a strictly stable price level is desirable, there immediately arises the need for full knowledge of underlying conditions upon which judgments may be used. In such a case, a price index alone is no substitute for broad knowledge.¹⁸

Summary of the Problem of Monetary Policy

The elimination of fluctuations in business activity is the central goal of modern monetary and credit policy. Although price movements may have undesirable results upon the distribution of national income, it is their adverse effect upon the *size* of the national income that commands the primary attention of students of monetary problems. In the light of this central goal, several basic questions are presented. First, are there available adequate instruments of control to enable those in charge of monetary and credit policies to put any given policy into effect? Second, what criteria are best suited to guide the authorities in the execution of the agreed upon policy? Third, what monetary policy offers the best possibility of making a genuine contribution to the solution of the problem of business instability?

In answer to the first question, it seems entirely possible that the needed control over money and credit can be exercised within the general framework of our present banking system. Particularly would this be true if the powers of the Federal Reserve System over reserve requirements were expanded and if an independent currency system were adopted. Under these circumstances, central bank policy might easily be made effective in limiting the expansion phase of cyclical price movements. If this plan were coupled with a determined policy of government investment during depressions, it should be possible to prevent the operation of purely monetary and banking forces tending to accentuate the decline. There seems to be no real necessity for

¹⁸ For an opposite view, see Henry Simons' "Rules *versus* Authorities in Monetary Policy," *Journal of Political Economy*, February, 1936. Simons holds that the control of monetary policy should be removed from dependence upon the current judgment of those in charge and instead be determined by a rigid and unvarying rule.

introducing such an arrangement as that proposed by the advocates of 100 per cent money in order that the required controls may be achieved.

As to the proper criteria for the administration of a credit policy, it is inevitable that some price index be given central place. Because the business community is most dependent upon the behavior of wholesale prices for its well-being, the stabilization and control of wholesale prices promises more beneficial results than stabilization of retail prices, costs of living, or general prices. The relatively greater sensitiveness of wholesale prices to cyclical developments is another point in favor of their stabilization.

The choice of monetary policy that promises the greatest contribution to economic stability lies between a neutral money of the kind that would provide for constant per capita money incomes, and stable wholesale prices. In theory, much can be said for a neutral money policy that would allow prices to fall in proportion to the growth in industrial efficiency. The basic argument for neutral money rests upon the lag of money costs of production behind the growth in efficiency. Were this lag avoidable, there would be little argument for neutral money. An added argument is found in the disturbing effects upon economic equilibrium that arise from the constantly increasing money supply required to provide stable prices in a world where output is expanding. To induce the credit expansion required to provide the increase in money and credit, the interest rate must be held below the point where saving and investment are equal. The inflationary result tends to be self-reversing in character and therefore would be a source of instability.

But in practice, a neutral money policy requiring stable per capita money incomes would present serious difficulties. It would prove irritating to labor because it would run counter to the firmly established human bias in favor of rising money wages. The adjustment of wages between the more and the less efficient laborers would become more difficult. The discovery of competent measuring devices for use as a guide to a neutral money policy promises to be almost impossible. In contrast, a stable price level offers definite advantages. Money wages can rise with a growth in efficiency. The wholesale price index is readily available for use in determining when to introduce measures of control. Stable prices, however, present certain difficulties. A closely followed policy of stable prices would be disturbing to stability if applied to short-run seasonal developments. A short

or a large crop will cause sharp variations in agricultural prices and will induce changes in the price index, but to impose either inflationary or deflationary pressure upon prices of other commodities in the pursuit of a stable index of wholesale prices would be entirely unwarranted under the circumstances. Some margin of tolerance for small short-run changes in the price index would be required. This, in turn, calls for the exercise of intelligent judgment by the monetary authority in timing the application of controls. Moreover, the inflationary character of stable prices when efficiency is growing cannot be disregarded. Provision for hastening the rise in the rewards of the factors of production in the face of growing efficiency must be provided. There is the possibility that reliance upon government action to expand the currency appropriately and with a strict limitation on the expansion powers of the commercial banks might avoid the danger of the development of a cumulative inflation movement.

Finally, it must be recognized that causes other than monetary ones contribute to economic instability. The most that one can hope for from successful monetary management is the removal of the cumulative expansion and contraction of business activity that are either imposed or facilitated by monetary and credit forces. To achieve this much would, indeed, be a very substantial gain.

INDEX

A

- Acceptability of paper for rediscount, 275
- Acceptance dealers, 437-439
- Acceptance market, 437
- Acceptances:
 - bankers':
 - borrowing with use of, 212-213
 - bought under repurchase agreement by reserve banks, 438
 - buying rate of reserve banks, 312, 379-380
 - commission charged, 217
 - dealers' profits, 217
 - domestic, 212, 217
 - eligibility for rediscount, 277
 - finance and loan bills, 370-374
 - for dollar exchange, 214, 374
 - foreign trade finance, 365, 372-373
 - for financing exports, 215-216
 - for financing imports, 215
 - importance in financing our foreign trade, 216-217
 - market for, supported by Federal reserve banks, 378-379
 - nature of, 212
 - purchase of for foreign correspondents by reserve banks, 379
 - rates on (*table*), 218
 - regulations governing, 213-214
 - reserve bank purchases under resale agreements, 312
 - use in foreign trade, 367-374
 - by British accepting banks, 346-347
 - trade, 164-167
- Accommodation paper, 168
- Account analysis, 82-85
- Administered prices, 742
- Advances by Federal reserve banks on members' collateral notes, 281-285
- Affiliates:
 - banking and nonbanking, 400-402
 - limits on loans to, 185-186
 - security company, 411

- Agricultural credit (*see* Farm credit)
- Aldrich Bill, 263
- Aldrich-Vreeland currency, 261-262
- American Bankers Association, study of guaranty of bank deposits, 97-99
- Anderson, B. M., criticism of proposed reforms of legal reserve requirements, 140
- Arbitrage, 375-376
- Automobile finance companies, 435-436
- Average balance rule, 172-173

B

- Balance of payments, 566-569
 - International price equilibrium, 568-569
 - nature of, 566-567
 - United States, 1939 (*table*), 567
- Balance of payments theory of exchange rates, 607-609
 - supported by French and German experience, 609-615
- Bank credit:
 - elasticity of, 260-261
 - need for, 227-228
 - source of, 258-259
 - expansion as a means of forced saving, 232-233
 - expansion on given volume of reserves, 220-222
 - for banking system as a whole, 221
 - for single bank, 220
 - limitation of:
 - by growth of thrift accounts, 225-226
 - by internal and external drains, 223-225
 - by required reserve ratios, 230-231
 - usages of the term, 219
 - volume:
 - contraction of, 222-223
 - factors determining, 220-231
- Bank crisis of 1933, 413-416

- Bankers' acceptances (*see also* Acceptances, bankers')
 as secondary reserve, 145-147
 volume outstanding (*table*), 147
- Bankers' balances, 88-89, 118-119, 131-133, 231, 253-257
- Bankers' bills, 361
- Bank failures:
 branch banks, 424
 causes, 416-417, 425-426
 Indiana banks (*table*), 420
 national vs. others, 421-423
 number, 413
 population per bank (*table*), 423
 relation of, to stockholders' equity, 424-425
 relation of size to, 418-420
 states with highest and lowest rates of (*table*), 423
- Banking holiday, 328, 414-415
- Bank investments (*see* Investments, bank)
- Bank money (*see* Money, bank)
- Bank note currency:
 advantages over specie, 234-235
 based on government bond collateral, 247-251, 257-258
 excessive issue of, 237-238
 importance of, before Civil War, 236-237
 need for regular presentment, 240
 preferred liabilities, 243
 redemption forced by First Bank of the United States, 240
 tax on state bank notes, 249
- Bank of Canada, 340
- Bank of England, 348-351
- Bank of France, 352-353
- Bank of State of South Carolina, 246
- Bank organization, types of, 59-60
- Bank statements, 61-64
- Bank stock:
 liability for assessment, 60-61
 preferred, sale to RFC, 61, 427-428
- Barter, problems of, 1-2, 19
- Beneficiaries of trusts, rights of, 383-384
- Bilateral clearing agreements, 633-635
- Bills of exchange:
 bankers', 361
 commercial, 360-361
 foreign, 360-363
 clean, 361
 documentary, 361
 nature of, 360
 rates of, 362-367
- Bills of lading, 160, 360
- Bimetallism, 26-27
 arguments for, 29-30
 compensatory action, 28-29
 England, 30-31
 Europe, 31
 Gresham's law and, 27-28
 United States, 31-34
- Bland-Allison Act of 1878, 33-34
- Blocked currencies, 629-636
 exploitation of creditors by use of, 632-633
- Board of Governors of the Federal Reserve System:
 annual report, 295
 members, 293-294
 powers, 294-295
 to change legal reserve requirements, 305, 315
 to define eligible paper, 277-278
 to permit national banks to exercise trust powers, 382
 to regulate interest payments on deposits, 78-80
 to regulate security loans, 186
 relation to Open Market Committee, 296
- Bond accounts:
 administration of, 198-199
 liquidity of, 193-196
- Borrowed reserves, 136-137
- Borrowers, open-market, 440-441
- Borrowers' statements, 169-171
- Branch banking:
 advantages, 405-406
 extent, 405
 failure experience, 424
 legal status, 408-410
 national banks, 408-409
 objections to, 406-407
 relation to group and chain banking, 408
 states permitting, 409
 superior management, 406, 427
 trust company service, 388
- Branches of Federal reserve banks, 293
- Breakdown of the gold standard (*see* Gold standard, breakdown)
- British Equalization Account, 618-621
- British exchange controls, 627-629
- Brokers' loans, 151-155, 431-433
- Bullionist theory of money, 557-561
 evaluation of, 560-561
- Bullion Report, 774-776
- Bureau of Labor Statistics wholesale price index, construction of, 462-464

C

- Cable transfers, 361, 363
- Call loan market, 431-432
- Call loans as secondary reserves, 144-147
- Canada's balance of international indebtedness, 593-595
- Canadian Bankers' Association, 341
- Canadian banking system, 336-343
 - bank notes, 338-339
 - Bank of Canada, 340
 - branches of chartered banks (*table*), 342
 - chartered banks, 336-339
 - investment bankers, 341
 - mortgage loan companies, 341
 - need for central bank, 339
 - regulation of banks, 340-341
- Capital-deposit ratio, 75-77
 - bank failures and, 425
 - required by bank supervisors, 76-77
- Capital exports, United States, 1923-1930 (*table*), 713
- Capital goods, postponement of purchase of, 2-3
- Capital loans:
 - commercial banks, 175
 - Federal reserve banks, 286
- Capital requirements of national banks, 60-61, 76, 248, 251
- Capital stock:
 - double liability on, 60, 248
 - Federal reserve bank, 264, 266
- Cash-balance demand for money, 480-484
- Cash-balance equations, 498-501
- Central bank credit policy, 304
 - conflict in standards, 317-318
 - effectiveness, 760
 - limitation of profit motive under, 317
 - reserve ratios as basis, 318-319
 - stabilization of business by, 319
- Central bank liabilities, as secondary standard money, 12-13
- Central banks:
 - gold exchange standard and, 47
 - instruments of monetary control, 758-759
 - relation to volume of money, 489-490
- Central reserve cities, 135, 248, 251
- Certified checks, 67-68, 82
- Chain banking, 403, 408
- Chartel theory of money, 558
- Checks, collection of:
 - drawn on out-of-town banks, 114-124
- Checks, collection of (*Cont.*):
 - float, effect upon, 118, 122
 - importance, 109-110
 - interdistrict, 115-118
 - on nonmember banks through Federal reserve banks, 115
 - through clearing house, 110-111
 - through correspondent banks, 118-120
- City correspondents, 88, 118-119
- Clearing banks, nonmember, 114
- Clearing house, 110-114
 - associations, 110
 - certificates, 111
 - checks, 260
 - clearing mechanism, 110-111
 - functions other than clearing, 111, 114
 - loan certificates, 114, 259
 - methods of settlement, 111
- Coinage laws:
 - of 1834 and 1837, 32
 - of 1873, 33
 - of 1878, 33
 - of 1900, 33
- Coinage of money:
 - free, 23
 - limited, 23-24
- Coin, United States, 14-15, 35
- Collapse of stock market, 1929, 146, 326
- Collateral for Federal reserve notes, 288-290
- Collection of nontransit items through the Federal reserve banks, 126
- Commercial banks:
 - ability to lend deposited funds, 53
 - consumer financing by, 177-178
 - economic functions:
 - apportionment of capital to best uses, 56
 - forced saving, 55-56
 - introduction of flexibility in supply of businessmen's capital, 57-58
- Commercial bills of exchange, 360-361
- Commercial loans:
 - secured by commodity collateral, 158-163
 - secured by stocks and bonds, 155-156
 - unsecured, 163-173
- Commercial paper, 144-148
- Commercial paper houses, 440-441
- Committee on Bank Reserves:
 - criticisms of existing reserve requirements, 138-139
 - proposed changes in reserve requirements, 139-140
- Commodity collateral loans, 158-163
- Compensating balances, 178-179

- Composite commodity unit plan for monetary stabilization, 771-773
 - Comptroller of the Currency, 247-248
 - classification of bank investments by, 192-193
 - definition of investment securities by, 197
 - instructions on evaluation of bond accounts, 192-193
 - Consolidations of national banks, 400
 - Continuous borrowers at banks, 205-206
 - Continuous borrowing at reserve banks, 313-315
 - Controlled exchange rates, 616-636
 - under gold standard, 616-617
 - under inconvertible paper currencies, 617-618
 - direct pressure on balance of payments, 623-629
 - blocked currencies, 629-636
 - control in England after Sept. 1, 1939, 627-629
 - control of capital exports, 626-627
 - exploitation of creditors, 632-633
 - Standstill Agreement, 630
 - exchange control funds:
 - British Equalization Account, 618-621
 - Tripartite Agreement, 622-623
 - United States Stabilization Fund, 621-622
 - official exchange rates, effects of, 635-636
 - purpose of control to:
 - block foreign creditors' claims, 618
 - provide exchange stability, 617-618
 - stimulate exports, 617
 - Co-operatives, banks for, 451
 - Corporate trustees:
 - advantages, 386-387
 - criticisms, 387
 - functions, 384-386
 - Cost of collecting checks, 83
 - Costs of depositors to bank, 83
 - Cowrie shells, 19
 - Credit contraction, 222-223
 - Credit expansion, primary and secondary, 305
 - Credit instruments (*see* Negotiable instruments)
 - Credit policy (*see* Federal reserve credit policy)
 - Crisis of 1873, 255
 - Current ratio, borrowers', 169-170
 - Customers' loans, importance of, 151
 - Cyclical fluctuations in business:
 - related to long-run price trends, 470-473
 - related to short-run price movements, 473-475
 - Cyclical price movements, cumulative nature of, 474-475
- D
- Dealers:
 - in acceptances, 348, 437-439
 - in commercial paper, 439-441
 - in Federal funds, 438
 - Debentures, Federal intermediate credit bank, 281, 449
 - Deferred credit on checks sent to Federal reserve banks, 115-117
 - Demand deposit currency, 54, 226 (*also see* Deposits, demand)
 - advantages over specie, 234-235
 - Demand for money:
 - cash-balance approach, 480-484
 - adjustment of buying power to cash balances, 481-482
 - businessmen's demand for cash balances, 483-484
 - consumers' demand for cash balances, 482-483
 - transactions approach, 477-479
 - Depositors:
 - classification, 87-88
 - liability of banks to, 81-82
 - Deposits:
 - account analysis, 82-85
 - classification for legal reserve requirements, 85-86
 - competition for, 77-79
 - creation, 80-81
 - demand:
 - as money, 13
 - definition, 86
 - distribution by economic classes (*table*), 87
 - prohibition of interest on, 78-79
 - Federal reserve bank, 15-16, 266
 - protection of, 75-77, 89-92, 93-108
 - regulation of interest on, 78-79
 - relation to stockholders' equity, 75-77
 - secured and unsecured, 88
 - segregation of thrift, 89-91
 - service charges on, 85
 - source of bank's lending power, 75
 - subject to check (*table*), 224
 - time:
 - as money, 14
 - check to credit expansion, 225-226

- Deposits (*Cont.*):
 time (*Cont.*):
 definition, 86
 interest on, 79
 regulation of withdrawals, 80
- Devaluation of the dollar, 727-731
 effect on prices, 730-731
 expected results, 729-730
- Directors of Federal reserve banks, 292-293
- Discount companies, 434
- Discount rate changes, result of gold movements:
 effect on long-term lending abroad, 585
 effect on short-term capital movements, 584-585
 effect on volume of imports, 585-586
- Distressed banks, rehabilitation of, 428-429
- Dollar:
 devaluation of, 329, 727-731
 exchange, 374
 Spanish silver, 31-32
- Double liability:
 on Federal reserve bank stock, 266
 on national bank stock, 60, 248
- Durable goods, postponement of purchase of by consumers, 3
- E**
- Earning assets, classes of, 141
- Earnings and losses on loans and investments (*table*), 200
- Easy money policy, development of, 326-327, 329-330
- Economic stabilization, difficulties of under gold standard, 746-748
- Effective money (*see* Money, effective)
- Eligibility, theory of, 278-280
- Eligible paper, as secondary reserve, 145-146
- Emergency:
 borrowing by members at Federal reserve banks, 282-283
 currency:
 Aldrich-Vreeland Act, 261-262
 Federal reserve bank notes as, 291-292, 415
 financing, farm credit, 446-449
- Emergency Banking Act, 415
- England:
 abandonment of gold, 1931, 716-718
 bimetallism in, 30-31
- English banking system, 343-351
 accepting banks, 346-347
- English banking system (*Cont.*):
 Bank of England, 348-351
 bank rate, 351
 condition, statement of (*table*), 349-350
 deposits, 350
 influence on money market, 350-351
 loans and investments, 350
 notes, 348-349
 open-market operations, 351
 discount market, 347-348
 joint-stock banks, 343-346
 cash reserves, 345
 deposits (*table*), 344
 loans and investments, 345-346
 number and branches, 343
 regulation, lack of, 344
 English pound, return to gold, 1925, 687-689
- Equations of exchange, 485-502
 criticisms of, 501-503
- Equilibrium interest rate and economic equilibrium, 542-544
- Equilibrium rate of interest, 533-535
- European banking crisis, 326-327
- Examination:
 branch banks, 407
 holding company groups, 404, 410
 state member banks, 294, 301
- Excess reserves:
 expansion, 329-332
 lack of, under national banking system, 254
 of Federal reserve banks, 268-269
- Exchange charges, 120-124
- Exchange depreciation, 637-653
 after 1929, reasons for, 637
 voluntary, 638-643
 behavior of wholesale prices in important countries (*chart*), 645
 competitive, 638
 depreciation of sterling, 646-648
 effect on internal price level, 639-643
 effect on prices abroad, 642
 effect on production (*table*), 652
 evaluation of results, 650-653
 extent of price adjustment, 641, 643, 649
 reasons for, 638-639
 results of, 643-653
 results of dollar devaluation, 648-650
- Exchange rates, foreign, 362-367 (*see also* Foreign exchange, rates)
 deviations from gold parities, sterling-area countries, 48

Exchange restrictions after 1929, reasons for, 624-626
 Exports, financing, 359
 External drain of specie, 224-225

F

Failed banks:

FDIC receiver for, 101, 429
 losses, 104-106
 rehabilitation, 427-429

Failures, bank (*see* Bank failures)

Farm credit:

banks for co-operatives, 451
 Federal Farm Mortgage Corporation, 448

Federal intermediate credit banks, 449

Federal land banks, 443-448
 emergency financing, 448-449
 location, 444
 purpose of loans, 445
 security for loans, 443, 445
 sources of funds, 446

Land Bank Commissioner loans, 448
 national farm loan associations, 443, 445-446

need for, 442-443
 production credit:
 associations, 450-451, 455
 corporations, 449-450

Farm Credit Administration, 451-452

Federal Advisory Council, 297

Federal Deposit Insurance Corporation, 99-108 (*see also* Guaranty of bank deposits)

assessment rate on insured banks, 100
 attempts to strengthen banking system, 106-108

borrowing power, 101

capital funds, 100

definition of interest, 79

experience, first 7 years, 104-106

income and expenditures, 105

management, 100-101

objections to size of assessment, 106
 payments to depositors of failed banks, 101

power to lend to receivers, 102

power to organize new national banks, 101

receiver of failed banks, 101, 429

regulation of interest on deposits of nonmember banks, 79

regulations of withdrawals of nonmember bank deposits, 80

statement of assets and liabilities of, 105

Federal Deposit Insurance Corporation (*Cont.*):

subrogation of, to depositors' rights against failed banks, 102

supervisory powers, 107-108

Federal Farm Mortgage Corporation, 448

Federal funds:

borrowing of, 136-137

dealers in, 438

Federal intermediate credit banks, 449

debentures, 281, 449

locations, 444, 449

Federal land banks, 443-448

Federal Reserve Act, origin of, 263

Federal reserve banks:

advances on member bank collateral notes, 281-284

importance, compared with rediscounts (*table*), 284-285

secured by eligible paper, 281-283

secured by ineligible paper, 282-284
 advances to nonmember banks, 270, 286, 415

branches:

location (*chart*), 265

management of, 293

capital, 264, 266

capital loans to industry, 286

condition (*table*), 272

contact with money market, 269-273, 304-305, 330

continuous borrowing at, 313-315

deposits, 15-16, 266

direct advances to banks, 270

direct loans to individuals, 273

directors, 292-293

excess reserves, 268

lenders of last resort, 306

liquidity:

need for, 278-279

related to temporary advances to members, 280

notes and deposits equivalent to cash to members, 287

notes of:

collateral requirements, 288, 290

redemption fund for, 289

reserve requirements, 289

open-market operations, 271, 272, 312-313 (*see also* Federal reserve credit policy)

fifteen-day repurchase agreements, 312, 379, 438

instrument of credit control, 312-313

limited to long-term bonds, 333

purchase of acceptances, 312, 379

- Federal reserve banks (*Cont.*):
 profit motive and, 267
 purchase of acceptances for foreign correspondents, 382
 rediscount rate, instrument of credit control, 308-311
 rediscounts:
 application for, 273-275
 for each other, 269
 paper eligible, 275-280
 relation to foreign exchange market, 378-380
 reserves required against deposits, 266
 suspension of, by the Board of Governors, 294-295
- Federal Reserve Board (*see* Board of Governors of Federal Reserve System)
- Federal reserve collection system, 114-117
 development, 123-125
 Interdistrict Settlement Fund, 117
 nontransit items, collection of, 126
- Federal reserve credit policy (*see also* Central bank credit policy):
 by periods:
 1914-1921, 320
 1922-1923, 321-323
 1924-1927, 324-325
 1928-1929, 325-326
 1930-1933, 326-329
 1933-1938, 329-331
 1939-1941, 332-335
 continuous borrowing, sentiment against, 313-315
 discretion, use of, 307-308
 easy money, in 1927, 324-325
 government fiscal policy, relation to, 316-318
 government gold-buying policy, relation to, 316, 331-332
 open-market operations, 312-313
 rediscount rate, 308-311
 special report to Congress, 1940, 334-335
 weapons of control, 759-760
- Federal reserve districts (*chart*), 265
- Federal reserve exchange, 126-127
- Federal Reserve System, state bank membership in, 297-303
 advantages, 300-301
 capital requirements, 297-303
 growth, 298-300, 302-303
 objections to, 301-303
- Fiduciary relations of trust companies, 381-390
- Fifteen-day repurchase agreements, 312, 379, 438
- Finance and loan bills, 370-374
- Finance companies, experience of, with automobile financing, 436
- First Bank of the United States, 240-241
- Fixed capital loans:
 growth, effects of, 210-211
 nature, 206
 objections to, 209
- Flexible exchange rates and economic stabilization, 745-746
- Forced balances:
 effect on multiple bank credit expansion, 221
 line of credit borrowers, 171-173
- Forced saving, 232-234
- Foreign banking systems, 336-358
- Foreign banking units of American banks, 377-378
- Foreign bills of exchange (*see* Bills of exchange, foreign)
- Foreign exchange:
 arbitrage, 375-376
 inland banks, sales of, 377
 market, place of Federal reserve banks in, 378-380
 merchants, 362
 rates, 362-363
 gold points, method of determining, 362-365
 under paper currencies, 365-367
 three-cornered, 376-377
- Foreign trade financing, 359-360
 American banks' share in, 216, 369
 by letters of credit (*see* Letters of credit)
- Forward exchange, 374-375
- Fractional bank reserves, criticism of, 764-765
- Free banking, 243-245
- Free gold, effect of collateral requirements of Federal reserve notes upon, 290
- French banking system:
 Bank of France, 352-353
 great credit banks, 354
- French franc:
 stabilization of, in 1926, 685-687
 undervaluation of, 687

G

- Garlock, Fred A., "Two Country Banks in Iowa and Virginia," 142-144
- General price level (*chart*), 466
 related to volume of demand deposits (*chart*), 493

- German banking system, 354-357
 giro system, 356
 private credit banks, 356-357
 Reichsbank, 355-356
- German mark, stabilization of, in 1923, 684-685
- Gold:
 export of, effect on credit policy, 326-328
 hoarding of, 415
 holdings of U. S. Treasury, 331-332
 import and export points, 363-365
 imports, sterilization of, 316, 331-332
 stability of value, 21-22
 superior qualities as money, 21-22
 supply of the United States, 14-16
- Gold Bloc abandons gold standard, 720-721
- Gold clause in contracts, repeal of, 731-732
- Gold coins, United States, 14-15
- Gold exchange standard:
 central banks and, 47
 Indian system, 42-43
 objections to, 46-47
 Philippine system, 40-42
 postwar, 44-46
- Gold movements:
 no corrective effects, 586-587
 central banks "offset," 585
 excess reserves in banking system, 585
 restore equilibrium in balance of payments, 583-584
- Gold problem, United States, 734-739
- Gold purchase plan, 1933, 726-727
- Gold Reserve Act, 1934, 36
- Gold Settlement Fund (*see* Interdistrict Settlement Fund)
- Gold shipping points, 576-577
- Gold standard, 34-39
 advantages, 37-38
 breakdown after 1929, 710-721
 England, 1931, 716-718
 environmental conditions of 1920's, 710-715
 cost and price rigidities, 713-714
 foreign lending, irregular, 712-713
 international debts, 712
 "offsetting" by central banks, 714-715
 short-term balances, 712
 European Gold Bloc, 720-721
 in raw material-producing countries, 715-716
 United States abandons gold, 719-720, 725-726
- Gold standard (*Cont.*):
 controlled exchange rates, 616-617
 countries on, exposed to world price changes, 3
 gold bullion standard, 35-36
 gold coin standard, 34-35
 resumption after First World War, 681-690
 deflation versus devaluation, 682-684
 England, 687-689
 France, 685-687
 Germany, 684-685
 objections to, 681-682
 other countries, 690
- Gold supply:
 adequacy, 691-709
 distribution of monetary stock, 1926-1931 (*table*), 707
 economies in use, 702-704
 maldistribution as cause of price decline, 704-709
 needed for long-run price stability, 692-698
 Cassel's estimate, 693-696
 Hardy and Wilcoxon's estimates, 697
 Kitchen's estimate, 696-697
 Warren and Pearson's estimate, 699-700
 shortage as cause of price decline after 1929, 698-702
- United States:
 causes of increase, 734, 736
 economic cost, 737-738
 inflationary threat, 736-738
 proposals to stop imports, 738-739
- Government fiscal operations, effect of on credit, 761
- Government fiscal policy, relation of to credit control, 316
- Government investment in public works, 769-771
- Government securities:
 as secondary reserve, 144-146
 with circulation privilege, 248, 251-252
- Graduated tax on reserve deficiency of reserve banks, 266, 269
- Greenbacks, redemption of, in 1879, 33
- Gresham's Law, 27
- Group banking (*see* Holding company banking)
- Guaranty of bank deposits, 95-108 (*see also* Federal Deposit Insurance Corporation); *experience with state systems*, 97-99

Guaranty of bank deposits (*Cont.*):
 mutual savings banks, 102-103
 original permanent plan, 99-100
 present system, 100-102
 reasons for, 96-97
 standards for judging, 93-94
 effect on functioning of banks, 96
 effect on management, 94-96
 financial burden, 97
 temporary plan, 99
 termination of insured status, 101-102
 type of deposits insured, 103
 Guinea, gold, 30

H

Hartzell, Elmer, method of for computing needed secondary reserve, 144
 Holding company banking:
 advantages, 404
 legal control, 410-411
 objections to, 404-405
 purposes, 402-403
 voting permits, 410

I

Impairment of reserves, penalty for, 136
 Income approach (*see* Theory of value of money, income approach)
 Inconvertible paper, 10-11, 24-25, 49-50
 Inconvertible paper currencies, rates of exchange on, 365-367
 Independent paper currencies:
 case for, 741-746
 economic stabilization with, 745-746
 freedom from world cyclical price changes, 756-757
 objections to, 751-757
 inflationary bias, 751-752
 long-term lending problem, 752-753
 seasonal disturbances, 755
 speculative short-term capital movement, 753-755
 Index numbers:
 aggregate type, 462-464
 base period, 460-461
 Bureau of Labor Statistics wholesale price, 457-458
 by groups of commodities, 456-457
 method of construction, 461-464
 problems of, 459-460
 India, gold hoarding by, 555
 Individual loans, limit on size of, 182-184, 248-250

Inelasticity of national banking system, 253-258
 Inflation:
 resistance to, 335
 resulting from exchange depreciation, 609-615
 France, 609-610
 Germany, 610-615
 Installment paper, bought by commercial banks, 178
 Insurance of bank deposits (*see* Federal Deposit Insurance Corporation; Guaranty of bank deposits)
 Insured mortgages as real estate loans of banks, 185
 Interdistrict Settlement Fund, 117-118, 128
 Interest-bearing debt, United States Government, 148
 Interest on deposits, regulation of, 78-79
 Interest rate:
 equilibrium, 533-535
 market, 535-539
 natural, 533, 542
 price level and, 533-551
 Interlocking directorates:
 between member banks, 411-412
 in chain banking, 408
 Intermediate credit banks, 449-450
 Intermediate credit for businessmen, 175-176
 Internal drain of currency, 223-224
 International gold standard, difficulties in, 741
 International lending and balance of payments, 596-597
 International monetary standard, economic stabilization under, 746-748
 International price relationships:
 balance of payments theory of exchange rates, 607-609
 gold standard:
 disequilibrium, causes of, 578
 disequilibrium, corrective forces of, 578-582
 from gold movements, 583-584
 short-term capital movements, 584-585
 spontaneous, 580-582, 592-593
 time required to operate, 587-591
 unilateral capital movements, 593-597
 goods moving in international trade, 569

International price relationships

(Cont.):

gold standard (Cont.):

- home-market commodities, 570-571
- in increasing-cost industries, 572
- meaning of equilibrium under, 571-572

- relation of prices of sheltered and unsheltered goods, 572-573
- unsheltered goods, 569-571

inconvertible paper currencies:

- balance of payments theory supported by experience of France and Germany, 609-615
- equilibrium rate of exchange, 598-600

- corrections of market rate, 607
- deviations from, 605-607

- exchange depreciation, cause of inflation, 609-615

France, 609-610

Germany, 610-615

- flexible exchange rates, 599-600

- overvalued currencies, 606

- purchasing power parity, 600-604

- calculation, method of, 601-602

- criticism of Cassel's method of calculation, 602-603

- deviations of market rate from calculated rate (*table*), 606

- price index suitable for calculating, 604-605

- seasonal fluctuations in exchange rates, 599-600

- undervalued currencies, 606

- price equilibrium, 568-569

International trade:

- bilateral clearing agreements, 633-635

- gold standard, settlement of debt balances under, 575-577

- resemblance to domestic trade, 565-566

Interregional trade:

- domestic, settlement of balances, 574-575

- effects of crop failure, 562-566

- effects of shifts in demand, 565

- effects of shifts in direction of capital movements, 564-565

Investment, incentives for, 511-512

Investment banking, type of financial institution, 52

Investment funds:

- demand for, 535-536

- supply of, 537-539

Investments, bank:

- administration, 198-199

- evaluation of bonds, 191-193

- legal regulation of, 195-198

- liquidity, 193-195

- losses on, 199-202

- member bank (*table*), 190

- national banks, classification of, 189

- under repurchase agreements, 195

Involuntary open-market operations,

- 312 (*see also* Federal reserve banks, open-market operations)

L

Land Bank Commissioner, loans by, 448, 453

Large-scale banking (*see also* Holding company banking, Chain banking, and Branch banking):

- advantages of, 397-400

- affiliated banks and companies, 400-402

- national banks, 400-401

- reasons for, 397-400

Latin Monetary Union, 31

Leakages, 522-523

Legal reserve requirements, 134-137

- classification of cities, 137

- computation method for member banks, 135-136

- deficiency, effect of, 136

- member banks, criticism of, 138-139

- reasons for, 132-134

- related to inelasticity of national banking system, 254-256

Letters of credit:

- applications for, 367-368

- financing shipments between foreign countries, 369

- import and export, 368-369

Licensing reopening of banks, 415-416

Line of credit, 171-173

Liquidity:

- Federal reserve bank:

- need for, 279-280

- related to temporary advances, 280 of bonds, 193-194

Loan and finance bills, 370-374

Loans and discounts, 150-186

- accommodation, 168

- affiliates, loans to, 185-186

- annual clean-up, 171

- brokers', 152-153, 431-433

- by New York banks for country correspondents, 156

Loans and discounts (*Cont.*):

- classification of member banks', 153, 176-177
- collateral loan agreement, 157-158
- commercial, secured by stocks and bonds, 155-156
- commercial paper, 144-149, 439-441
- commodity collateral, 158-163
 - bills of lading, 160
 - trust receipts, 163
 - warehouse receipts, 161-162
- earnings and losses on (*table*), 200
- executive officers, loans to, 185-186, 427
- expansion of, on new reserves, 220-222
- fixed-capital, 206-211
- individual loans, limits on size of, 182-184, 248, 252
- legal regulation, 182-186
- real estate, 178-182, 184-185
- secured by banks' own stock, prohibited, 184
- secured by stocks and bonds, 152-156
- security trading, margin requirements for, 186
- self-liquidating, 204-209
- shiftable versus self-liquidating, 206-209
- short-term, 151, 174
- single-name paper, 168
- term loans, 175-177
- to continuous borrowers, 205-206
- unsecured, 163-174
- Loans and investments:
 - member banks, 154
 - percentage yields (*chart*), 201
 - relative returns on (*chart*), 188
- Loans for "others," 432-433
- Long-term interest rates, relation of to discount rate, 550
 - from failed banks, 104
 - on bond investments, 199-201

M

- Maladjustment of world's gold supply, 704-709
- Managed paper standards, 49-50
 - advantages, 50
 - objections to, 50
- Marginal efficiency of capital, 519
- Market rate of interest versus equilibrium rate, 540-542
- Market ratio, bimetallism, 26, 30

Member banks:

- borrowing on collateral notes secured by:
 - eligible paper and government bonds, 281-282
 - ineligible paper, 282-285
- deposits of member and nonmember banks (*table*), 303
- earnings and losses on loans and investments (*table*), 200
- examination by Federal reserve banks, 294, 301
- excess reserves, 138
 - chart showing, 329
 - expansion, 329-330
- legal reserve requirements, 134-136, 138-139
- loans, classification of, 151, 153
- loans and investments (*chart*), 154
- number of member and nonmember banks (*table*), 302
- rediscounts (*see* Federal reserve banks, rediscounts)
- reserve requirements (*table*), 134; (*see also* Required reserves for member banks)
 - changes affecting excess reserves (*chart*), 329
 - instrument of credit policy, 305, 315
 - separation of security companies from, 411
- Metals, monetary, 20, 22
- Mill, J. S., on demand for money, 479
- Mint ratio, bimetallism, 26, 28
- Mitchell, W. C., on changing prices and length of prosperity and depression, 470-472
- Monetary and credit standards:
 - qualitative standards of credit policy, 774-779
 - banking theory, 776-779
 - Bullion Report, 774-776
 - Currency School, 776-777
 - self-liquidating commercial loans, 776-779
 - quantitative standards of credit policy, 780-795
 - choice of price levels for stabilization, 780-782
 - constant per capita money incomes, 789-791
 - neutral money, 785-790
 - stable wholesale prices, 782-784
- Monetary management:
 - international co-operation, 748-750
 - difficulties of, 748-749
 - possible methods of, 749-750

Monetary management (*Cont.*):

- methods of, 758
- central banks, 758-761
- composite commodity units plan, 771-773
- control of foreign exchange rate, 763-764
- Fisher's stabilized dollar, 761-763
- government investment in public works, 769-771
- one hundred per cent money, 764-769

Monetary nationalism (*see also* Independent paper currencies):

- case against, 751-757
- case for, 741-746
- facilitates economic stabilization, 745-746
- increasing rigidity of prices, 742-745

Money:

- bank, 12-13
 - demand deposits, 13
 - time deposits, 14
- coinage, 23-24
- defined, 9-10
- effective, 14, 16-17
- inconvertible paper, 24-25
- medium of exchange, 1-2, 8-9
- metals used for, 20-21
- need for stable value, 7-9
- origins, 18
- primitive forms, 19-20
- standard:
 - in circulation, 12
 - other than gold, 15
 - the State and, 11-12
 - variability of, 11
- standard of deferred payments, 9
- standard of value, 7
- store of value, 8-9
- types of, in United States, 17-18
- use of, causing economic disturbances, 2-3

Money desk, New York Stock Exchange, 432

Money economy, and business cycles, 4

Money market, contact of reserve banks with, 269-273

Mortgage trust certificates, 180

Multiple expansion of bank credit, 221-222

Multiplier, the, Phase I, 520-525

- leakages, effect of, 522-525
- price level and, 523-524
- public works and, 524-525

Multiplier, the, Phase II, 525-532

- propensity to consume, 526

Mutual saving banks, insured deposits of, 102-103

N

National Banking Act, 247-251

National banking system:

- difficulties under, 253-257
- inelasticity, 255-257
- seasonal movement of funds, 1905-1908 (*table*), 254

Treasury aid during crises, 259

National bank notes, 248-250

- collateral, 257-258
- called for redemption, 251
- inelasticity, 257-258
- limit on volume, 249-250
- redemption:

- agents, 248, 250
- fund, 250

reserve requirements removed, 250

National banks:

- branch banking, limits of, 408-410
- consolidations, 400-401
- double liability on stock, 60-61, 248
- expanding powers, 252-253
- failure experience, 421-423
- individual loan limit, 182-184, 248, 252
- investments, 187-189, 197-198
- real estate loans, limits on, 184-185, 248, 252
- reductions of required capital, 251
- reserves required against deposits, 248, 253
- trust department earnings, 393
- trust powers, 375, 390-392

National Credit Corporation, 413

National farm loan associations, 443, 445-446

Natural interest rate, 533, 542

Negotiable instruments, 70-74

- defenses against payment, 71
- holders in due course, 71
- indorsements, types of, 72-73
- liability of parties, 73-74
- material alteration, 72
- presentment and notice of dishonor, 73-74
- tests of negotiability, 71
- types, 70

Neutral money, 765-766

New England Bank, 239

Nonearning assets, 120

Nonmember clearing banks, 114-115
 Nonpar banks, 119-120, 125
 Nontransit items, collection of, 126

O

Official rates of exchange, 618, 628, 633, 635
 One hundred per cent money, 764-769
 some criticisms of, 767-769
 time deposits and loans under, 766
 Open Market Committee, 295-297
 Open-market operations of Federal reserve banks (*see also* Federal reserve banks, open-market operations)
 effect on reserves of member banks, 271-272
 instrument of credit control, 312-313
 relation to rediscounting, 312-313
 Open-market policy, flexible portfolio of 1939, 332
 Operating ratios of member banks, classified as to size (*tables*), 398, 399
 Overdrafts, 66, 82

P

Paper money, inconvertible, 24
 Paper money exchange standard, 48-49
 Par collection:
 controversy, 124-126
 of checks:
 Federal reserve banks' efforts to establish, 124-126
 legislation to prevent, 125-126
 suits to prevent, 125
 Pegged exchange rates, 667-668
 Peso, Philippine, 40-42
 Pittman Act, 291
 Population per bank of states with good and bad failure rates, 423
 Portfolios of banks, requirements of, 203-204
 Preferred stock of national banks, 61, 427-428
 Price-control measures, 672-679
 Price-level changes:
 effects of, 465-475
 on business incomes, 469-470
 on debtors and creditors, 468-469
 on income distribution, 4-5
 on wage earners, 470
 long-run changes and prosperity and depression, 470-472

Price-level changes (*Cont.*):
 measurement of, 456
 short-run changes and effect on business activity, 473-475
 types of, 466-467

Prices:

 discount rate and, 544-551
 dispersion among individual, 463, 465-467
 falling, and business depression, 3-4
 in Canada, 1900-1913 (*table and chart*), 595
 rising, disturbances of, to business, 4
 Prices and exchange rates, during acute inflation, 610-613
 Prices and war, 654-680 (*also see* War and prices)
 Primary credit expansion, 305
 Production credit associations, 449-451
 Production credit corporations, 449-451
 Profits, windfall, 4
 Propensity to consume, 526
 Public works as method of monetary management, 769-771
 Purchasing power, shifts of, as correctives in balance of payments, 580-582
 Purchasing power parity:
 calculation, method of, 601-602
 criticism of Cassel's method, 602-603

Q

Quantity theory of money, 486-488
 applied directly to M and M' , 490-498
 central banks and, 489-490
 versus Bullionists, 557-561

R

Real estate loans, 178-181, 184-185
 advisability of making, by banks, 180-182
 amortization of, 181
 insured mortgages, 185
 mortgage trust certificates, 180
 national banks' limits on, 184-185
 Real income, per capita, related to changing price levels, 472-473
 Receivables, loans on, by discount companies, 434
 Receivers of failed banks, 101-102, 429-430
 Recognized dealers in acceptances, 438

- Redemption fund:
 for Federal reserve notes, 289
 for national bank notes, 250
- Rediscounting (*see* Federal reserve banks, rediscounts)
- Rediscount rate:
 as instrument of credit policy, 308-311
 subject to control by Board of Governors, 294
- Rediscounts of reserve banks for each other, 269
- Regulation T, on security loans by brokers, 186, 433
- Regulation U, on security loans to brokers and speculators, 186, 433
- Rehabilitation of failed and distressed banks, 427-429
- Rentenmark, 684-685
- Reopened banks, after holiday, 415-416
- Reparations, German, 610, 684
- Repurchase agreements, 312, 379, 438
- Required reserves for:
 Federal reserve banks, 266-268
 member banks, 134-135, 305, 315
 national bank notes, 248, 250
 suspension of, by Board of Governors, 294-295
- Reserve bank credit (*chart*), 327
- Reserve cities, 132, 134, 248, 251
- Reserve ratios:
 effect on expansion of bank credit, 230-231
 of Federal reserve banks, 268-269
- Resumption of gold standard (*see* Gold standard, resumption of after First World War)
- RFC:
 agricultural credit corporations, 450
 gold purchases by, 726-727
 loans to banks, 413-414
 purchase of bank stock and debentures, 415, 426-428
- Rigidity of prices, 742-745
 cause of breakdown of gold standard after 1929, 713-714
- Rising prices and economic well being, 784-785
- S
- Safety Fund System, 242-243
- Saving and investment, inequalities of, as causes of business and price changes, 510-517
- Savings, volume of, factors affecting, 526
- Savings banks, 52-53
- Seasonal movement of funds, 1905-1908, 254
- Second Bank of the United States, 241-242
- Secondary credit expansion, 305
- Secondary reserves:
 bankers' acceptances, 145, 147-149
 call loans, 145-147
 commercial paper, 144-145, 147-149
 composition, 144-146
 definition, 142
 earning rates on different types (*table*), 147
 eligible paper, 145-146
 government securities, 146-148
 size affected by behavior of deposits, 142-144
- Securities Exchange Act, 186, 433
- Security companies, separation of from banks, 411
- Security loans:
 classification, 155
 regulations of Board of Governors, 186, 433
- Security trading, loans for, 152-154
- Segregation:
 of thrift deposits, 89-92
 of trust assets, 382
- Self-liquidating loans, 204-208, 278-280, 776
- Sensitive prices versus insensitive prices, 743-744
- Service charges, 85
- Sheltered goods, 570-571
- Sherman Silver Purchase Act of 1890, 33-34
- Short-term loans, economic use of, 55-58
- Silver Purchase Act of 1934, 733-734
- Silver question, the, 732-734
- Single-name paper, 168-173
- Sovereign, British, 35
- Spanish silver dollar, 31-32
- Spontaneous correctives of disequilibrium in balance of payments, 580-582
- Stabilization Fund, 14, 621-622
- Stabilized dollar, 761-763
- Stable prices, wholesale, inflationary effect of, 783-784
- Stable prices and equality of savings and investment, 784
- Standard money, 10-11 (*also see* Money, standard)
- Standstill Agreements, 630
- State Bank of Indiana, 246

State Bank of Ohio, 246
 State banks:
 advantages over national banks, 249-252
 affiliated with national banks, 400-402
 failure experience, 421-423
 membership in Federal Reserve System, 297-303
 ratio to all banks (*table*), 252
 State member banks, regulation of investments, 197
 Sterilization of gold imports, 331-332
 Sterling-area countries, 49
 Stockholders' equity, related to bank failures, 424-425
 Stock market collapse, 1929, 146, 326
 Stop payment orders, 82
 Straight rehabilitation plan, 428-429
 Subsidiary Coinage Act of 1853, 32
 Suffolk Bank, 238-240
 Supply of capital:
 effect of commercial banks on, 53-56, 231-234
 effect of savings banks on, 52-53
 Surplus:
 Federal reserve banks, 100, 267
 national banks required to carry net profits to, 61
 required to start a national bank, 61
 Sweden, gold exclusion policy of, 668

T

Telegraphic transfers, 128
 Term loans, 175-177
 Theory of eligibility, 278-280
 Theory of value of money:
 cash-balance approach, 480-484
 equations, 498-501
 central banks, place in, 489-490
 discount rate and price level, 544-551
 Hawtrey's view, 547-548, 551
 Keynes' view, 548-551
 discount rate changes, effect of:
 on long-term interest rates, 544-550
 on marginal business undertakings, 545
 on middlemen's borrowing, 547-548
 on speculation, 545-546
 equations of exchange, criticisms of, 501-503
 gold, 552-561
 cost of production and value, 553-554
 equality of money value and bullion value, 552-553
 monetary demand for, 556-557

Theory of value of money (*Cont.*):
 gold (*Cont.*):
 monetary supply, 555
 output and changes in price level (*chart*), 553
 income approach, 504-517
 equations, 505
 Hawtrey's approach, 508-510
 income velocity (*table*), 507
 Multiplier, Phase I, 520-525
 Multiplier, Phase II, 525-530
 Multiplier and public works, 524-525
 savings and investment approach, 510-517, 514, 517
 interest rate, place of, 533-551
 quantity theory, 486-488
 applied directly to M and M' , 490-497
 Bullionist versus, 557-561
 transactions equation, 485-489
 velocity, place of:
 acute inflation and deflation, 496-498
 equality of V and T , Snyder's study on, 492-495
 equality of V and T , theoretical case for, 490-492
 Thomas Amendment of the AAA, 727-729
 Three-cornered exchange, 376-377
 Time deposits (*see* Deposits, time)
 Trade acceptances, 164-167
 abuses, 166
 advantages to banks, 165-166
 bankers' objections to, 166-167
 nature and use, 163-164
 Trade paper, 163-164
 Traders' outlay, 509-510
 Transactions approach:
 demand for money, 477-479
 equation, 485-490
 Transfer drafts, Federal reserve, 127
 Tripartite Agreement, 622-623
 Trust companies, 381-396
 advantages to banks in being, 388-389
 classification of fiduciary functions, 386
 classification of types and assets, 391
 common trust funds, 389
 concentration in trust business, 389-390
 deposit of securities with state authorities, 387
 early development, 381
 earnings, 393-394
 fees for trust services, 394-396

Trust companies (*Cont.*):

- national banks as, 390-392
- types of trusts, 384-385
- Trustees, duties and liabilities of, 382-384
- Trust receipts, 163

U

- Unitary demand for money, 478-479
- United States:
 - abandons the gold standard, 719-720, 725-726
 - bimetallism in, 31-34
 - Government interest-bearing debt, 148
 - money, 14-18
 - securities:
 - collateral for Federal reserve notes, 288, 290
 - purchase by Federal reserve banks (*see* Federal reserve banks, open-market operations)
 - stabilization fund, 621-622
 - Unspent margin, 509
 - Unused reserves, source of elasticity, 227-228, 258-259

V

- Vault cash, 132-133, 224
- Velocity of bank deposits in United States, related to volume of trade, 492, 496
- Velocity of money, income, 506-508
- Velocity of money in Germany, 1921-1923, 497
- Voting permits, holding company, 410

W

- Waiver and sale plan of bank reorganization, 429
- War and prices, 654-680
 - avoidance of price inflation, 669-677
 - draining off consumers' incomes, 669-670
 - high interest rates, 670
 - output expansion, 670-671
 - price controls, 672-679
 - movements of controlled and uncontrolled prices (*table and chart*), 675
 - 1917-1918 experience, 673-677
 - overall ceilings, 677-678
 - problems after 1940, 677-679
 - rationing, 672-673
 - selective type, 678-679
 - business inflation, 662
 - gold standard abandoned in 1914, 666-667
 - neutral countries, position of, 662-665
 - postwar price movements, 679-680
 - wholesale price movements in various countries (*table*), 622
- War finance:
 - borrowing, arguments for and against, 655-662
 - consumers, effect on, 658-659
 - inflation, usefulness of, 657-658
 - pegged exchange rates, 667-668
 - per cent taxes to total governmental expenditures, 1917-1919 (*table*), 656
 - problems of, 654-661
- Warehouse receipts, 161-163
- Wildcat banks, 238, 244-245
- Working reserves, 132-133

